

# PSYCHOLOGICAL ABSTRACTS

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## CONTENTS

General.....	5193-5212
Sensation and Perception.....	5213-5262
Feeling and Emotion.....	5263-5265
Attention, Memory and Thought.....	5266-5268
Nervous System.....	5269-5315
Motor Phenomena and Action.....	5316-5350
Plant and Animal Behavior.....	5351-5381
Evolution and Heredity.....	5382-5403
Special Mental Conditions.....	5404-5424
Nervous and Mental Disorders.....	5425-5457
Personality and Character.....	5458-5464
Social Functions of the Individual.....	5465-5499
Industrial and Personnel Problems.....	5500-5507
Educational Psychology.....	5508-5529
Biometry and Statistics.....	5530-5547
Mental Tests.....	5548-5553
Childhood and Adolescence.....	5554-5576

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# AUTHOR INDEX

- Ackerman, N. W., 5425  
Adler, A., 5404  
Al, W., 5465  
Alkens, H. A., 5508  
Albrecht, W., 5316  
Aleck, A. W., 5526  
Anderson, C. L., 5426  
Anderson, E. E., 5351  
Anderson, F. N., 5427  
Anderson, H. H., 5554  
Anderson, J. E., 5561  
[Anon.], 5466  
Aesch, H., 5555  
Aeratian, E., 5317, 5318
- Baegge, —, 5509  
Bagghi, B. K., 5428  
Bagh, K. v., 5213  
Ballnt, A., 5510  
Bally, G., 5429  
Bals, A. G. A., 5193  
Barcroft, J., 5319  
Bard, P., 5314  
Barnes, R. M., 5500  
Barron, D. H., 5269, 5319, 5320  
Barry, D. T., 5270  
Barth, E., 5321  
Basler, A., 5214  
Bast, T. H., 5215  
Battelli, F., 5352  
Bauch, B., 5194  
Baumgarten-Tramer, F., 5467  
Behr-Pinnow, C. v., 5381  
Bell, G. H., 5353  
Bentley, J. E., 5556  
Ble, V., 5430  
Binswanger, L., 5266  
Blanchard, P., 5511  
Blatz, W. E., 5431  
Blitzstein, D. R., 5405  
Blum, H., 5354  
Boeke, J., 5271  
Bogue, J. V., 5272, 5273  
Bouman, H. D., 5274  
Boynton, P. L., 5526  
Bracken, H. v., 5383  
Brake, J., 5468  
Brandenburger, P., 5322  
Bratu, I., 5275  
Braun, E., 5557  
Bray, C. W., 5259  
Brill, M., 5548  
Brown, C. W., 5195  
Brown, F. D., 5516  
Brown, G. L., 5276  
Brown, L. M., 5535  
Broxson, J. A., 5516  
Brunton, C. E., 5323  
Bull, H. O., 5335, 5356  
Bunch, C. C., 5216  
Burdon, P., 5354  
Burge, W. E., 5292, 5341, 5348  
Burt, C., 5432  
Buxbaum, E., 5406
- Campbell, J. A., 5196  
Canavyn, M. M., 5384  
Carmichael, E. A., 5312  
Carr, R. H., 5469  
Castelnuovo, G., 5197  
Cate, J. ten, 5277, 5324  
Chang, H. T., 5357  
Charpentier, G., 5358  
Chen, H. P., 5263, 5470  
Cheng, P. L., 5217  
Chlorazoo, G., 5327  
Christoffel, H., 5407, 5558  
Clark, A. H., 5257, 5260  
Clark, J. H., 5342  
Clark, R., 5384  
Cobb, S., 5433  
Conklin, E. S., 5526  
Coppee, G. E., 5298  
Cowan, S. L., 5278
- Crozier, W. J., 5218, 5254  
Culler, E. A., 5219, 5366
- Dale, H. H., 5276, 5279  
Datta, A., 5559  
Davis, H., 5220, 5304  
Davis, R. A., 5526  
deKleyn, A., 5325  
Dennen, P., 5571  
De Vries, J., 5198  
Dexter, E. S., 5312  
Diakonoff, A., 5359  
Doll, E. A., 5471  
Dombrowsky, H., 5501  
Dory, A., 5560  
Downing, A. C., 5199  
Dretler, J., 5434  
Driesch, H., 5200  
Dugas, L., 5435  
Duse, A., 5360  
Dusser de Barenne, J. G., 5290  
Dworkin, S., 5221
- Eckart, C., 5330  
Edelmann, E., 5502  
Edgerton, H. A., 5531  
Einhorn, N. H., 5342  
Elhardt, W. P., 5292  
El Kousay, A. A. H., 5222  
Emery, E. V., 5472  
Erhardt, A., 5361  
Erwin, D., 5567  
Escher-Desrivieres, J., 5223  
Eyster, J. E. A., 5215
- Fairbairn, W. R. D., 5408  
Falqui, A., 5419  
Faris, E., 5201  
Farkas, B., 5362  
Fay, P. J., 5202  
Fehler, P., 5224  
Fei, C. H., 5473  
Feldberg, W., 5276  
Feng, T. P., 5326  
Fenichel, O., 5474  
Ferguson, L. W., 5475  
Fertig, J. W., 5532  
Fisch, G., 5366  
Fischel, W., 5363  
Fisher, R. A., 5385  
Fishman, D., 5264  
Fletcher, J. M., 5526  
Floyd, W. F., 5203  
Foma, P. E., 5498  
Foster, J. C., 5561  
Fowler, E. P., 5225  
Fox, D. L., 5380  
Frederico, H., 5280  
Freeman, F. S., 5526  
Friedjung, J. K., 5436  
Friedmann, A., 5562  
Friis-Skotte, E., 5226  
Fröbes, A., 5204  
Fukuoka, G., 5227  
Fulton, F. S., 5305
- Gabriel, E., 5386  
Galor, J. B., 5312  
Garrison, C. C., 5513, 5526  
Garrison, S. C., 5513  
Gaskill, H. V., 5503  
Gasser, H. S., 5281  
Gault, R. H., 5228  
Gazel, P., 5352  
Gedeon, S., 5573  
Geller, W., 5549  
Gentakow, L., 5514  
Gerard, P., 5364  
Gerard, R. W., 5210, 5282  
Gerberich, J. R., 5515  
Geremia, A., 5327  
Ghiarelli, E. E., 5195  
Gibson, A. B., 5476  
Gifford, W. J., 5526  
Giltay, M., 5365
- Girden, E., 5366  
Gizard, C., 5410  
Glaus, A., 5437  
Gluckmann, A., 5229  
Goldstein, G., 5328  
Goldstein, M. A., 5230  
Good, C. V., 5516  
Graewe, H., 5563  
Graf, O., 5409  
Gray, J. S., 5526  
Greenabield, B. D., 5504  
Griffin, H. D., 5533  
Griman, H., 5550  
Grünthal, E., 5283  
Guild, S. R., 5231  
Gulliksen, H., 5534  
Gutmann, M., 5551
- Haldane, J. B. S., 5387  
Haldar, R., 5477  
Hagen, F., 5345  
Hanhart, E., 5388  
Hanson, A. M., 5342  
Hanum, S., 5232  
Hardy, J. D., 5243  
Harrevel, A. van, 5438  
Harris, M. M., 5439  
Harrison, J. S., 5329  
Hartemeier, H., 5535  
Hartmann, G. W., 5526  
Hartmann, H., 5589  
Hartnack, W., 5390  
Head, L., 5410  
Hecht, S., 5233  
Heinery, A. B., 5567  
Heinze, E., 5330  
Hellpech, W., 5411, 5412  
Hendrickson, G., 5516  
Henry, F. M., 5195  
Herren, R. V., 5284  
Hess, F., 5267  
Hetzler, H., 5564  
Heuer, O., 5234  
Hill, L., 5331, 5332  
Hoagland, H., 5247, 5285  
Holcomb, R. L., 5503  
Holzmeister, C., 5565  
Honzik, M. P., 5567  
Horton, G. P., 5259  
Horwitz, W. A., 5439  
Hovland, C. L., 5333  
Hoxton, L. G., 5205  
Hughson, W., 5235  
Huizinga, E., 5334  
Hyman, E., 5354
- Ionasiu, L., 5440, 5441  
Irwin, O. C., 5576  
Ishikawa, N., 5236
- Jackson, R. W. B., 5536  
Jaffe, A. J., 5486  
Jeffreys, H., 5206  
Jellinek, E. M., 5537  
Jensen, M. B., 5237  
Jersild, A. T., 5526  
Jewell-Lapan, W., 5238  
Johnson, B., 5566  
Johnson, P. O., 5538  
Jones, D. C., 5391  
Jones, E. J., 5413  
Jongbloed, J., 5442  
Judd, C. H., 5517  
Just, G., 5518
- Katz, B., 5286  
Katsoff, E. R., 5462  
Kaven, A., 5392  
Kerridge, P. M. T., 5478  
Key, C. B., 5567  
Kimball, H. S., 5310  
Klein, V., 5479  
Kleinholz, L. H., 5367  
Knizuk, M., 5339  
Kohn, R., 5340  
Kok, D. J., 5438
- Kokubo, S., 5368  
Kolbe, L. E., 5531  
Koller, G., 5369  
Körner, G., 5443  
Kramm, H., 5519  
Krebs, E., 5568  
Krechevsky, I., 5370  
Kris, E., 5414  
Kroh, O., 5569  
Kubie, L., 5415
- Laird, D. A., 5268  
Langdon-Brown, W., 5335  
Lawther, J. D., 5526  
Lay, W. A., 5520  
Lechner, J., 5444  
Ledermann, W., 5539  
Legrün, A., 5480  
Leigh, R. D., 5481  
Levin, M., 5416  
Levitsky, P., 5340  
Lewis, A., 5393  
Lilienthal, J. L., 5294  
Lincoln, R. A., 5526  
Lindsay, D. B., 5284  
Loe, Y. T., 5287, 5288  
Lorge, I., 5552  
Loucks, R. B., 5207  
Lu, T. W., 5313  
Lucas, A. M., 5289  
Lurie, M. H., 5220
- Macleod, R. B., 5239  
Magoun, H. W., 5282, 5336  
Mal, B., 5208  
Malzberg, B., 5482  
Maskin, M., 5340  
Matthews, B. H. C., 5269  
McConnell, T. R., 5526  
McCulloch, W. S., 5290  
McGrady, E., 5240  
McNally, W. J., 5337, 5371  
McNelly, W. C., 5336  
McSwiney, B. A., 5329  
Meng, H., 5521  
Menninger, C. F., 5425  
Mettler, F. A., 5366  
Meyer, K., 5241  
Miknecik, J. E., 5289  
Minnick, D. E., 5372  
Molitor, H., 5339  
Moraldi, M., 5373  
Moriason, R. S., 5291  
Moser, F. A., 5526  
Müller, E. V., 5394  
Müller, M., 5483  
Müller-Freienfels, R., 5458  
Myers, A. J. W., 5522
- Nayer, P. P. N., 5540  
Neecheles, H., 5340  
Neild, H. W., 5292, 5341  
Neuer, A., 5459  
Neumann, J., 5484  
Neyman, J., 5538, 5541, 5542  
Nice, L. B., 5264  
Nicholsen, H. C., 5293  
Nieuwenhuis, A. W., 5485  
Noelle, G., 5564  
Nogue, J., 5242
- Obermeyer, C., 5209  
Offner, F., 5210  
Ogburn, W. F., 5486  
Oppel, T. W., 5243  
Orth, O. S., 5292, 5341  
Ostancow, P., 5460  
Osterberg, G., 5244  
Ottensack, F. J., 5294
- Paesmore, J. A., 5417  
Parkin, A., 5487  
Pearson, E. S., 5541, 5542  
Peck, M. W., 5418
- Penard, S., 5295  
Penfield, W., 5296  
Penrose, L. S., 5395  
Penttilä, K., 5505  
Perkins, F. T., 5297  
Peugnet, H. B., 5298  
Pike, F. H., 5299  
Pinto, G., 5419  
Pollock, H. M., 5445  
Ponzo, M., 5506  
Popescu-Sibiu, I., 5396  
Powers, F. F., 5526  
Preda, G., 5446, 5447  
Price, B., 5397  
Pumphrey, R. J., 5300, 5301
- Rabic, J., 5302  
Rademaker, G. G. J., 5303  
Range, R. W., 5420  
Rauh, A. E., 5374  
Rawdon-Smith, A. F., 5301  
Reinhold, F., 5398  
Rempel, B., 5304  
Repond, A., 5448  
Reynolds, W. R., 5516  
Riech, D. McK., 5291  
Ritterhaus, E., 5399  
Riviere, J., 5421  
Robson, J. M., 5353  
Rochon-Duvigneaud, A., 5265, 5364  
Rock, R. T., Jr., 5526  
Roese, J., 5245  
Roff, M. F., 5239  
Rombach, J., 5488  
Roos, M. M., 5507  
Rosenberg, H., 5272, 5273  
Rosenbluth, A., 5304  
Rosenow, L., 5523  
Rowntree, L. G., 5342  
Roxo, H., 5449  
Rubin, E., 5246  
Rubin, M. A., 5247  
Ruch, T. C., 5305  
Russell, D. S., 5343
- Sadler, W. S., 5450  
Sandon, F., 5524  
Schamp, H. M., 5341  
Scheidt, W., 5248  
Scheits, W., 5249  
Scheminsky, F., 5316  
Schiff, H., 5553  
Schikola, H., 5525  
Schindlmayr, L. J., 5451  
Schlomer, G., 5452  
Schmeing, G. K., 5489  
Schmidt, I., 5402  
Schmidt, J. J. v., 5211  
Schultz-Naumburg, A., 5400  
Scott, J. P., 5401  
Sealy, W. B., 5306  
Sears, M., 5375  
Seidler, R., 5422  
Sgonina, K., 5376  
Siemens, O., 5423  
Sirokogorov, S. M., 5490  
Sivickis, P. B., 5377  
Sjögren, T., 5453  
Skinner, C. E., 5526  
Smith, J. M., 5570  
Smith, K. U., 5307  
Smith, M., 5491  
Smith, R. B., 5461  
Sobin, S., 5293  
Sogemeier, L., 5492  
Speidel, C. C., 5308  
Spiegel, E., 5309  
Spiegel-Adolf, M., 5309  
Spragg, S. D. S., 5378  
Stagner, R., 5462  
Steger, J., 5344  
Steggerda, M., 5571  
Steinberg, A., 5342
- Steinberg, J. C., 5320  
Stephenson, W., 5540  
Stevens, S. S., 5250  
Stranek, E., 5493  
Strifou, A., 5572  
Strughold, H., 5345  
Stumper, R., 5379  
Sukhatme, P. V., 5540  
Sullivan, J. E., 5341  
Sumen, —, 5441  
Sumner, F. B., 5300  
Suman, S., 5584
- Tait, J., 5337, 5371  
Tansley, E., 5229  
Targowia, K., 5454  
Taylor, J. H., 5494  
Teagarden, F. M., 5494  
Thomas, W. L., 5495  
Thompson, E., 5312  
Thompson, I. M., 5312  
Thompson, G. H., 5504  
Thomson, M. K., 5312  
Thorndike, E. L., 5460  
Thurstone, L. L., 5540  
Tower, S. S., 5311  
Trabue, M. R., 5526  
Travia, L. E., 5284  
Trendelenburg, W., 5494  
Tschermak-Seyewitz, 5212, 5252  
Tum Suden, C., 5381  
Turner, F. H., 5527
- Unger, H., 5455  
Uprun, V., 5312  
Upton, M., 5253, 5358  
Urstadt, E., 5424
- Van Dyke, L. A., 5310  
Van Horn, O., 5328  
[Various], 5255, 5486  
Vater, E., 5457  
Verrier, M., 5223  
Versteegh, C., 5325  
Versteegh-Solleveld, C., 5496  
Vértes, O. J., 5574  
Vialle, L., 5497  
Vogel, P., 5346
- Wagner, R., 5256  
Wald, G., 5257  
Wallin, J. E. W., 5516  
Walton, E. P., 5490  
Wang, G. H., 5313  
Warner, W. L., 5499  
Washburne, J. N., 5516  
Webb, L. W., 5526  
Wegmann, L., 5258  
Weim, P., 5347  
Welch, B. L., 5547  
Wenger, M. A., 5575  
Werner, E. G., 5259  
White, M. R., 5567  
Wickwire, G. C., 5292  
Williamson, E. G., 5516  
Wilmoth, L. M., 5516  
Windle, W. F., 5319  
Winsor, C. P., 5260  
Witcher, S. L., 5306  
Witting, E. G., 5305  
Witty, P. A., 5526  
Woerdeman, H., 5261  
Wojszatek, W., 5550  
Wolf, D., 5216  
Wood, E. R., 5526  
Woolsey, C. N., 5314  
Wright, W. D., 5262  
Wu, K. S., 5315  
Wymann, L. C., 5381
- Young, G., 5530  
Yun-Kael, T., 5403  
Zimmet, D., 5352  
Zintl, H., 5256

# PSYCHOLOGICAL ABSTRACTS

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November, 1936

## GENERAL

5193. Balz, A. G. A. The metaphysical infidelities of modern psychology. *J. Phil.*, 1936, 33, 337-351.—“The history of modern psychology . . . is a conflict between Descartes and Aristotle.” If the metaphysics of Descartes is adopted there should be only two sciences, one dealing with matter-events (physics) and the other with soul-events (psychology). Any apparent connection between these two sets would have to be explained by theology. On this foundation electric manifestations, chemical reactions, physiology, neurology, animal behavior, etc., will belong to physics. The psychologist, to avoid infidelity, must either abandon his interest in laboratories and in alliance with other sciences or discard the prevailing Cartesian concept of matter. In Aristotelian unity with its concept of vegetative soul, nutritive soul, etc., psychologists would find their devotion to scientific laboratories justified—provided they can convert their brother scientists to a similar Aristotelian loyalty.—E. T. Mitchell (Texas).

5194. Bauch, B. Zum Problem der Kausalität. (The problem of causation.) *Forsch. Fortsch. dtsch. Wiss.*, 1935, 33, 422-423.—The classical formulation of causation has been refuted, especially through the findings of modern physics. In reality, the crisis is not in causation as such but in our ideas concerning it. The accumulation, in any occurrence, of a series of causes, the multiplicity of which is incalculable for us, makes a mathematically exact prediction impossible, but at the same time allows a reliable forecast. “Accident” is a coincidence of a series of causes, the totality of which does not fit in with our ideas. Causation remains the basis and premise in the most various fields of science, history, culture, and action.—S. Drobnes (Freiburg).

5195. Brown, C. W., Henry, F. M., & Ghiselli, E. E. A new technique for producing lesions of the encephalon cortex. *Science*, 1936, 84, 232-233.—Two strips of spring steel, .05 mm. thick, 1 mm. wide, and 7 mm. long are attached parallel to each other to a suitable handle and supplied with radio frequency energy from a low voltage radio frequency thermo-coagulator. The cross-sectional shape of the lesion is affected by the width and spacing of the strips, the voltage and current density, and the duration of the exposure. The authors claim that this design is particularly efficient because it allows the area of destruction to be more accurately controlled by insulating part of the electrodes to obtain smaller lesions or separating them for larger areas, more nearly uniform depth of lesion is obtained, less overlying bone tissue needs to be removed, and, because the strips are flexible, ventral portions of the cortex may be reached. A method of calibration of

the amount of cortical area affected is given.—F. A. Mote, Jr. (Brown).

5196. Campbell, J. A. A box mask for administration of oxygen. *J. Physiol.*, 1936, 87, 59P.—A simple mask is described which weighs only about 3 ounces, has no valves to offer resistance to breathing, and needs no nasal catheter.—M. A. Rubin (Clark).

5197. Castelnovo, G. Il principio di causalità. (The principle of causality.) *Scientia*, Bologna, 1936, 60, 61-68.—In its qualitative form the principle of causality has a heuristic value which all scientists admit. Doubts as to its validity enter only when one attempts to formulate the principle in strictly quantitative terms. Nevertheless there remains the possibility of a deterministic mechanics, more complex than the classical mechanics, which will not confine itself simply to the movements of electrons but will consider the other elements (photons, etc.) which enter into contact with them during their movement.—D. W. Chapman (Recorder's Court Clinic, Detroit).

5198. De Vries, J. Zielsicherheit der Natur und Gewissheit der Erkenntnis. (Purposefulness of nature and certainty of knowledge.) *Scholastik*, 1935, 11, 1.—The author discusses whether the intentional perceptual image is conscious or unconscious. The conviction of the reality of an object is only a secondary idea which follows the immediate intuitive character of its being so.—U. Dähnert (Dresden).

5199. Downing, A. C. A moving-coil oscillograph and short-period galvanometers. *J. Physiol.*, 1936, 87, 3P.—M. A. Rubin (Clark).

5200. Driesch, H. Die Maschine und der Organismus. (The machine and the organism.) *Bios*, 1935, 4. Pp. viii + 76.—After posing the central biological problem whether it is possible, given a certain structure, to find any relationship between the organic and the physical-chemical processes, the unsolvable nature of the coordination problem is stated with reference to the work of A. Bethe. The concept of “machine,” especially of “building” machine, is then discussed in detail, giving to the concept “automaton” an important place. Organic causality is contrasted with inorganic causality and a fundamental organic law is given. Types of “best-arrangement,” of which wholeness is one, are given, thus touching upon the psychological. In the appendix the author defends himself against the attacks of Schilick and Carnap. Here, and occasionally in the main text, he opposes the indefiniteness of the so-called “holism” (Smuts, A. Meyer) and the indiscriminate use of the concept “wholeness” in general. (Cf. *Zur Kritik des Holismus*, *Acta biotheor.*, 1935, 1, 186.)—H. Driesch (Leipzig).

5201. Faris, E. Of psychological elements. *Amer. J. Sociol.*, 1936, 42, 159-176.—The list of psychological elements that have been proposed within the last three centuries includes innate ideas which served to justify the doctrines of the church while rejecting the authority of the scholastics. Innate ideas were opposed by the empiricists as undemonstrable, a revolutionary epoch finding support in the doctrine of associated ideas, received through the senses. When this theory seemed to lead to skepticism, separate faculties were advocated, thus providing an innate form to human mental and moral life which was independent of experience. Faculty psychology became top-heavy and was abandoned, only to reappear in our day in the form of abilities, whether of "intelligence" or of other skills. The experimental period produced the notion of sensations and feelings as elements, but this could not meet the difficulties of the mind-body problem. Other proposed elements include separate instincts, specific reflexes, innate structures or Gestalten, and wishes or desires. The disagreement about the nature and number of the elements suggests that psychology has pursued a false analogy; instead of describing the process of social life in terms of antecedent elements, the so-called elements could better be interpreted in terms of the process and as significant aspects of the process.—(Courtesy *Amer. J. Sociol.*)

5202. Fay, P. J. *General psychology workbook and laboratory manual*. Ann Arbor: Edwards, 1936. Pp. 55.—Part 1 consists of 15 laboratory exercises which are, for the most part, conventional experiments in introductory general psychology. All of the pages are perforated and are to be detached from the manual as separate laboratory reports. Part 2 consists of work sheets for eleven major units of study in general psychology.—*W. C. Middleton* (DePauw).

5203. Floyd, W. F. A modification of the apparatus for recording electrical phenomena from the skin. *J. Physiol.*, 1936, 87, 24-25P.—*M. A. Rubin* (Clark).

5204. Fröbes, J. *Psychologia speculativa, in usum scholarum*. (Textbook of philosophical psychology.) (2 vols.) Herder: Freiburg, 1927. Pp. 262; 360. M 6.30.—This book, written in Latin and widely used among Catholics, aims to unite what is most valuable in traditional psychology with the facts of experimental psychology. It is the result of many years of teaching of experimental and philosophical psychology. Volume I treats of sensation, instinct, the sensory soul, the four classical inner senses, memory, localization, habit, and spontaneous movements. Volume II takes up reason, will and the rational soul, sensualism and intellectualism, judgment, freedom of the will, actualism and the doctrine of substance, body and soul, and immortality.—*J. Fröbes* (Aachen).

5205. Hoxton, L. G. A simple speed control for small D.C. motors. *Science*, 1936, 84, 187-188.—For small D.C. shunt motors of  $\frac{1}{8}$  to  $\frac{1}{4}$  H.P. used for laboratory and demonstration purposes by the author over a period of 12 years, the following principle of speed control has been found practicable.

This principle consists in reducing the potential on the armature terminals without changing that on the field magnet when speeds lower than the designed normal speed are desired, while for speeds above normal the field magnet is weakened while the potential on the armature is kept at full value. A potential divider, appropriate field and armature plug made of a vacuum tube base, and reversing and fast and slow switches provide a control board giving a speed range of from 1 to 2 r.p.s. to about 100 r.p.s. depending upon the load.—*F. A. Mole, Jr.* (Brown).

5206. Jeffreys, H. The problem of inference. *Mind*, 1936, 45, 324-333.—*R. R. Willoughby* (Brown).

5207. Loucks, R. B. A technique for faradic stimulation of tissues beneath the integument in the absence of conductors penetrating the skin. *Amer. J. Physiol.*, 1936, 116, 98.—"In experiments where it is desired to stimulate internal tissues over a period of weeks or months, wires brought out through the skin may prove very troublesome. Fine wires are easily broken. Heavy wires may lead to infection. In 1933 and 1934 the writer published descriptions of a technique which obviates these difficulties. The procedure developed is that of embedding a collodion coated coil beneath the skin and leading insulated wires from the coil to the point to be stimulated. No wires penetrate the integument. This coil, sealed under the skin, will absorb energy from an activated primary field coil outside the experimental animal just as the secondary of a transformer absorbs energy from its primary, with which it has no direct wired connection."—*T. W. Forbes* (N. Y. Psychiatric Institute).

5208. Mal, B. Philosophical approach to the subject-matter of psychology. *Indian J. Psychol.*, 1935, 10, 183-189.—Psychology as far as possible should keep aloof from philosophical speculations. Allegiance to the structural standpoint should not continue, but, rather, psychological studies should be approached from the side of behavior.—*R. W. Russell* (Clark).

5209. Obermeyer, C. *Body, soul and society; a critique of modern psychology*. New York: Basic Books, 1936. Pp. 106. \$.50.—*R. R. Willoughby* (Brown).

5210. Offner, F., & Gerard, R. W. A high speed crystal ink writer. *Science*, 1936, 84, 209-210.—"The motion of a 'bimorph' type Rochelle salt crystal is transmitted through an amplifying lever to a pen of stainless steel tubing designed for maximum strength consistent with low motion of inertia." One or more of these write on  $1\frac{1}{2}$  inch paper tape moving at a speed of 20 cm/sec, the highest justified by the frequency characteristics of the apparatus. "Response amplitude is practically independent of frequency to 130 cycles per second; within 40 per cent to 190." This instrument may be used for the recording of electroencephalograms, electrocardiograms, and potentials and discharge frequencies of the central nervous system units.—*F. A. Mole, Jr.* (Brown).

5211. Schmidt, J. J. v. *Sociologie van het denken*. (The sociology of thinking.) *Mensch en Maatsch.*

1936, 12, 252-267.—A concise graphic review of the philosophic principles and historic tendencies of the theories of thought and knowledge and of scientific methods that are pertinent to the interpretation of sociological facts. Since conceptualization is based on experience, each thinking group, both historical and contemporary, develops particularized thought systems that are accepted by them as absolute but are not comprehensive enough to be representative for all humans. This process is the basis for the organization of the sciences and their groupings and for class consciousness alike. The current politico-economic attitudes and organizations show the inevitable social consequences of this tendency: The whole system is based on the uncritically accepted principle that logical or mathematical reasoning leads inevitably to final truths. The forms of thinking have been abstracted from the objective content. It is necessary that thinking, in both form and content, be recognized as an historically developed process and the product of the experiences of particular social groups, if real social and scientific progress is to be made. That the required objective consideration of one's own thinking is entirely practicable is seen from the fact that ideas can be historically, socially and individually identified by the trained expert, as are art productions.—O. N. deWeerd (Beloit).

5212. Tschermak-Seysenegg, A. *Leukoscop zur Untersuchung Partiell-Farbenblinder.* (Leukoscope for examination of the partially color-blind.) *Arch. Augenheilk.*, 1935, 133.—P. Klimpel (Leipzig).

[See also abstracts 5237, 5339.]

## SENSATION AND PERCEPTION

5213. Bagh, K. v. *Quantitative Untersuchungen auf dem Gebiete der Berührungs- und Druckempfindungen.* (Quantitative investigations in the field of touch and pressure sensations.) *Z. Biol.*, 1935, 96, 153-177.—(*Biol. Abstr.* X: 10922).

5214. Basler, A. *Über die Anpassung an die Empfindung von Hautschmerz.* (Adaptation to the sensation of skin pain.) *Z. Biol.*, 1935, 96, 332-338.—In 3 children just becoming accustomed to going barefoot, the pain threshold of the sole was raised, although there was no thickening of the epidermis. In 1 case a passing indisposition lowered the threshold. In 2 other subjects it was found that fingers accustomed to immersion in hot water had similarly a decreased sensitivity to heat but not to other stimuli. It is concluded that such adaptation is specific, and that decreased skin sensitivity depends upon the nervous mechanism, especially that of the ganglion cells, and not upon epidermal thickening.—C. tum Suden.

5215. Bast, T. H., & Eyster, J. E. A. [No title.] *Ann. Otol., etc., St. Louis*, 1935, 44, 792-803.—Acute experiments were carried out on guinea pigs, using the Wever and Bray method for studying cochlear response. The authors conclude that cochlear currents are influenced by the pressure relations across certain membranes in the cochlea. Differences in relative pressure between the endolymph and peri-

lymph greatly reduce or abolish the response. Low frequencies are more readily picked up from the apex and high frequencies from the base of the cochlea. This localization is not completely specific. The cochlear response may occur in the guinea pig when the organ of Corti is in large part atrophic.—D. J. Ingle (Mayo Clinic).

5216. Bunch, C. C., & Wolff, D. *The absence of the organ of Corti: an audiometric and histologic study.* *Ann. Otol., etc., St. Louis*, 1935, 44, 754-771.—Three cases are presented which had retained varying degrees of auditory sensitivity in the complete absence of the organ of Corti. Several other writers have pointed out this same phenomenon.—D. J. Ingle (Mayo Clinic).

5217. Cheng, P. L. [A preliminary study of the range of perception.] *J. Testing* (Chinese), 1935, 2, No. 2. Pp. 31.—The aim of this experiment was to measure the limit of ability to perceive and recite correctly a stimulus of short duration. The materials used were 4 lists of numbers composed of Arabic numerals, from 1 to 9 inclusive. Each list consisted of 13 numbers ranging from 3 places to 15 places, and in every case the numerals were arranged in random order. The numbers were shown to the subjects in a group by means of Hsiao's exposure device, always from the 3-place number up to the 15-place number in succession. Each number was exposed for 3 secs., and the subjects were then required to write it on a blank form. In the main experiment, 364 junior high-school students, 128 boys (ages from 10 to 18 years) and 236 girls (ages from 11 to 17 years), were tested. The range or span of number perception was determined by the largest number which a subject could perceive and reproduce correctly. By "the largest number" was meant that all preceding numbers had been correctly reproduced. The results showed that so far as the general average was concerned, the range of number perception was smallest in the first list (probably due to unfamiliarity of the experimental situation), largest in the third list, and practically equal in the second and fourth lists. The average limit of number perception for the boys tested was from 7.859 to 9.266 numerals, with a differential score of 1.407; for the girls, from 7.386 to 8.975 numerals, with a differential score of 1.589. There seemed to be a tendency for the range of number perception to increase with grade. The average range was larger for the boys ( $8.563 \pm 0.558$  numerals) than for the girls ( $8.210 \pm 0.437$  numerals). The younger subjects had a wider range of number perception than the older ones in the same grade. When the age was the same, subjects in the higher grades had a narrower range than those in the lower grades. The oldest subjects always had a narrower range than any of the younger ones, thus indicating that intelligence is closely related to the range of number perception. For the boys the range of number perception seemed to increase with age; but for the girls there was no such definite tendency. So far as the individual variation was concerned, extreme cases were very few. The lowermost and uppermost ranges of number perception for the boys were 6.2

and 11.5 numerals; for the girls, 3.25 and 11.5 numerals respectively. When the uppermost range had been reached, addition of even one more numeral to the number would produce an interfering effect, i.e., the number of numerals that could be correctly reproduced was decreased by 40% to 90% of the original value. However, the wider the original range the less was this decrement.—C.-F. Wu (Nat. Res. Inst. Psychol., Acad. Sinica, Nanking).

5218. Crozier, W. J. On the sensory discrimination of intensities. *Proc. nat. Acad. Sci., Wash.*, 1936, 22, 412-416.—"Recognition of the statistical character of the just detectable increment of intensity of light permits calculation of  $\Delta I (= I_1 - I_2)$  from suitable data upon other visual functions" (flicker recognition, etc.). "The quantitative agreement between the properties of  $\Delta I$  thus calculated and as determined directly requires that the law of effect (sensory intensity) as a function of stimulating intensity be dealt with as a band which measures the probability of occurrence of the index response."—F. S. Keller (Colgate).

5219. Culler, E. A. [No title.] *Ann. Otol., etc., St. Louis*, 1935, 44, 807-813.—The Wever-Bray technique was employed for measuring the cochlear response in guinea pigs. The cochlea was exposed by a ventral approach through the bulla and was mapped into 25 points. With the active electrode placed on one of these designated points a tone of 125 cycles was fed into the ear and the threshold intensity determined for that tone. On repeated tests the frequency cycle was increased in 20 steps up to a maximum of 7000 cycles. This entire set of 20 readings was repeated for accuracy. This procedure was then carried through for each of the 25 points on the guinea pig cochlea. It was demonstrated that each frequency has its own focus of response within the cochlea, as the cochlear response was shown to be maximal for a single frequency at a given point. The maximal error for the experimental location of a point was 12%.—D. J. Ingle (Mayo Clinic).

5220. Davis, H., Lurie, M. H., & Stevens, S. S. [No title.] *Ann. Otol., etc., St. Louis*, 1935, 44, 776-777.—Electrical audiograms were taken in guinea pigs before and after drilling through the cochlear wall and damaging the organ of Corti at various levels. Subsequent microscopic study established the location and extent of each lesion. It was demonstrated that audiograms for high tones are localized near the basal end of the cochlea, 2000 c.p.s. at the middle, and the low tones are bunched closely toward the helicotrema.—D. J. Ingle (Mayo Clinic).

5221. Dworkin, S. [No title.] *Ann. Otol., etc., St. Louis*, 1935, 44, 803-807.—Studies of hearing acuity were carried out in normal cats, cats having middle ear damage, and cats having damage to the cochlea. The details of the methods employed are not described. It was demonstrated that the monaural audiogram of the normal ear reaches its greatest sensitivity between 5000 and 10,000 cycles. Between 100 and 3000 sensitivity in the cat is similar to that of man, but above 5000 it is lower. In middle ear

deafness a changing frequency-intensity curve is still obtainable, although the threshold is increased. Small lesions in the apex of the cochlea produced a complete cochlear deafness.—D. J. Ingle (Mayo Clinic).

5222. El Koussy, A. A. H. Space perception. *Brit. J. Psychol., Monogr. Suppl.*, 1935, No. 20, Pp. 89.—R. R. Willoughby (Brown).

5223. Escher-Desrivieres, J., & Verrier, M. L. Modalités de la vision et cellules visuelles. (Modalities of vision and visual cells.) *J. Psychol. norm. path.*, 1936, 33, 184-230.—The authors discuss theories of vision, microscopic examinations of visual cells, retinal adaptation, threshold, the critical frequency of flicker, the relation of the theory of duality to normal visual acuity, and anomalies of vision. They conclude that physiological optics cannot sanction the dualistic idea which, in its simplest form, explains the complexity of vision by invoking a functional duality of the visual cells. From the purely physiological point of view it is important to notice a great similarity between certain retinal reactions and the reactions of other sensory surfaces. Again, the eye is not only a nervous organ, but also an optical instrument; and an analysis of variations in visual acuity does not uphold the theory of a duality. It seems that in the vertebrates one finds more visual cells of an intermediary nature than pure rods or cones. The different forms of visual cells exist in animals which inhabit different environments. The nocturnal animals as well as the diurnal ones can have exclusively rods or cones, or retinas where both elements coexist. The exclusive existence of cones in the diurnal and rods in the nocturnal animals is not a general rule. The behavior of animals seems to be independent of the form of the receptive elements in their retinas.—R. E. Perl (New York City).

5224. Fehrer, P. Über Störungen der Geschmacksempfindungen. (Disturbances of taste sensations.) Bonn: Trapp, 1935. Pp. 31.—R. R. Willoughby (Brown).

5225. Fowler, E. P. [No title.] *Ann. Otol., etc., St. Louis*, 1935, 44, 824-837.—The author summarizes the physical and clinical evidence concerning localization of low tones in the cochlea. Changes in the cochlea windows may account for loss in low tones irrespective of nerve lesions. Clinical tests for the diagnosis of such changes are described.—D. J. Ingle (Mayo Clinic).

5226. Friis-Skotte, E. Undersøgelse af adaptationsevnen hos sygeplejeeleverne ved rigshospitalet. (Investigation of adaptation ability in student nurses at the state hospital.) *Ugeskr. Laeg.*, 1936, 98, 680-682.—102 student nurses aged 21-27, who had been eating in the hospital at Copenhagen from 3 months to 3 years, were observed for higher degrees of hemeralopia as a possible indication of a diet deficiency in vitamin A. All had a vision of 6/6 and refraction anomalies were corrected before the test. Edmund and Møller's test tables were used as well as Tscherning's photometric glasses. The general conclusion that the hospital diet was ample as regarding vitamin A (in spite of the fact that butter is not on the menu)

is illustrated in various detailed tables.—*M. L. Reymert* (Mooseheart Laboratory for Child Research).

5227. **Fukuoka, G.** Frequency of taste-blindness among the Japanese and related races. *Eugen. News*, 1936, 21, 52-54.—Variation in the taste phenomenon following the stimulus para-ethoxy-phenylthiocarbamide was studied among 971 Japanese and 55 Korean school children ranging in age from 9 to 15 years. The findings compared with those of other studies "testify that taste-blindness is rarer in Mongolians than in whites and possibly than in negroes . . . (but) very similar to that of the American Indians." A bibliography of 10 titles is appended.—*M. V. Loudon* (Pittsburgh).

5228. **Gault, R. H.** Recent developments in vibro-tactile research. *J. Franklin Inst.*, 1936, 221, 703-720.—The vibro-tactile sense involves both the sense of touch and a "sense of vibration"; the two make up "a very crude and primitive form of hearing." Earlier findings indicated that subjects can interpret the rhythmic patterns of spoken sentences, detect accented syllables, and distinguish pitch differences. Further experimentation has completely confirmed these findings. Evidence is presented to show that subjects improve in their ability to "designate the pattern, or the profile of sentences" after two hours practice time. "This type of learning experiment . . . helps us grasp at least one reason why this type of vibro-tactile experience helps the young deaf child to interpret spoken language and to gain the mastery of his own speech." Apparatus is described, and data are presented to show that subjects are able to indicate, with slightly less accuracy than by hearing, the direction from which vibratory impressions are coming. Experiments are now in progress (1) to improve the amplifying apparatus in order to present pitch characteristics of speech with the same relations of distinctness as these characteristics are received by the ear; (2) to control certain conditions that are immediately associated with stimulation of the sense organs, such as the optimum pressure of the organ upon the vibrating unit and the optimum area of contact with the unit.—*C. V. Hudgins* (Clarke School).

5229. **Glückmann, A., & Tansley, K.** The formation of an additional fiber layer in the developing rat retina after  $\gamma$ -radiation. *J. Physiol.*, 1936, 87, 1-2P.—Moderate exposure of the eye of a 2-day-old rat to radium results in the appearance of a new fiber layer which splits the inner nuclear layer into two. This new layer contains nerve fibers, whose connections are described.—*M. A. Rubin* (Clark).

5230. **Goldstein, M. A.** Discussion from the point of view of clinical observations. *Ann. Otol., etc., St. Louis*, 1935, 44, 822-824.—The author reviews some of the physical and physiological data on the Helmholtz theory of hearing.—*D. J. Ingle* (Mayo Clinic).

5231. **Guild, S. R.** Discussion from the point of view of studies on human temporal bones. *Ann. Otol., etc., St. Louis*, 1935, 44, 738-753.—The author

attempts to correlate the records of hearing acuity with the structural conditions found in histologic preparations of temporal bones. Control groups of cochleae from patients with good hearing for all tones have been studied. Total atrophy of the nerve and organ of Corti in the extreme basal end of the cochlea is not necessarily associated with demonstrable functional defects. Partial atrophy of the stria vascularis may be present in the apical, middle and basal turns in ears with good hearing for all tones; but this stria atrophy is the most common lesion found in the middle and apical turns of ears with impaired hearing. An auditory function for the macula sacculi cannot be definitely excluded. All tones up to and including 1024 d.v. can be heard well when only the apical and middle turns and upper part of the basal turn are in condition to function. There are few examples of low-tone deafness being associated with lesions in the upper turns, but there are many examples of lesions in the lower basal turn being associated with high-tone deafness. There may be some essential difference in the way in which the ear distinguishes high and low tones.—*D. J. Ingle* (Mayo Clinic).

5232. **Hanum, S.** Om refractionens betydning ved undersøgelse af øjets klarhedssans. (On the importance of refraction by investigations of visual acuity.) *Ugeskr. Laeg.*, 1936, 98, 665-669.—Three young normal subjects were artificially made ametropic to different degrees in order to determine the relation between refraction and "sense of clarity" (Fechner fraction, discrimination ability), when angle of vision and clarity were kept constant. Results are given in tables and graphs. Brief bibliography.—*M. L. Reymert* (Mooseheart Laboratory for Child Research).

5233. **Hecht, S.** La nature de la discrimination d'intensité dans la vision et la photoréception. (The nature of the discrimination of intensity in vision and photoreception.) *J. Psychol. norm. path.*, 1936, 33, 161-184.—The author reviews all the data available on the problem of the discrimination of visual intensity. The results for animals such as the bee, the clam, and the fruit-fly are very similar to those obtained in man. In general, the fraction  $\Delta I/I$  decreases as the dominant intensity increases. The curves for man differ from those of other animals only in that they are divisible into two sections, while the other animal curves are continuous. In the case of the human eye, the section of the curve corresponding to the lower intensities represents the function of the rods, while the section of high intensities represents the function of the cones. A theory of the discrimination of visual intensities is proposed which explains this discrimination in terms of the initial photochemical phenomena which take place in the photoreceptive process.—*R. E. Perl* (New York City).

5234. **Heuer, O.** Das haptische Gleichhoch und Gleichweit. (Tactual equality in height and distance.) *Zeulenroda: Sporn*, 1935. Pp. 28.—*R. R. Willoughby* (Brown).

5235. Hughson, W., Thompson, E., & Witting, E. G. [No title.] *Ann. Otol., etc., St Louis*, 1935, 44, 777-792.—In investigations of tonal localization in cats the authors have studied clinically deaf animals and animals having experimental lesions produced in their cochleae. The transmission of frequencies was determined by the Wever and Bray technique. No evidence was found to indicate localization of low frequencies at the apex of the cochlea. The apex may be regarded as necessary for optimum experimental transmission or clinical perception of tones. Any portion of the cochlea may serve to transmit low frequency tones.—D. J. Ingle (Mayo Clinic).
5236. Ishikawa, N. Die Untersuchung über das Verhältnis zwischen der Zeitdauer und der Spannung bei der elektrischen Reizung des einzelnen Schmerzpunktes. (An investigation on the relation between the duration and the strength of electrical stimulation of a single pain point.) *Jap. J. med. Sci. III. Biophysics*, 1935, 3, 231-246.—Using a constant current of variable duration applied to the skin by a capillary pore electrode, the author has measured the threshold strength-duration curve for single pain spots in man. The chronaxy lies between 0.05σ and 0.4σ, increasing as the diameter of the pore electrode is diminished. Possible causes of this variation are discussed.—E. D. Adrian (Cambridge).
5237. Jensen, M. B. Tests for color-blindness, visual acuity, astigmatism. Louisville: Author, 1935.—The test material consists of a folded heavy paper card about 15" square, containing four patterns of the Ishihara type with the digits replaced by bars, and a group of six 3/4" circles with horizontal grids at various inclinations. There are a 7-page manual of directions and a black covering envelope. The material is distributed by the Psychological Corporation.—R. R. Willoughby (Brown).
5238. Jewell-Lapan, W. Perception and reality. *J. Phil.*, 1936, 33, 365-373.—In the context of eyes, etc., objects are colored and conform to perspective. In other contexts they have the characteristics described in physics. In other networks they have still other characters. All these are equally real, and it is illegitimate to assign a higher degree of reality to one set than to any other. When meaning is added to the object of sensation we have perception. When experiment and verification are added we have knowledge. There are several types of knowledge, from knowledge in the field of sensation to that of abstract mathematical relations, but in the field of particular objects we have knowledge only when we have connected the object in a structural context. This is possible only on the basis of past experience and repeated observation. Naïve realism is based on two propositions. The first, that we know things as they are, has been shown to be meaningless; the second, that knowledge is perception, has been shown to be false.—E. T. Mitchell (Texas).
5239. Macleod, R. B., & Roff, M. F. An experiment in temporal disorientation. *Acta Psychol., Hague*, 1936, 1, 381-423.—Estimates of time were secured from two subjects over periods of 86 and 48 hours respectively under conditions in which no physical cues were given as to the passage of time. Both subjects gave evidence of a marked initial error in estimation of clock time, which diminished as the experiment progressed. Notwithstanding this error in judgment of clock time, the estimates of both subjects presented certain regularities, which are interpreted in terms of a structured personal time. Arguments and conclusions are presented that this personal time is based upon some as yet unknown physiological mechanism and not upon physical cues or inferences from observable bodily processes.—K. U. Smith (Rochester).
5240. McGrady, E. [No title.] *Ann. Otol., etc., St Louis*, 1935, 44, 813-818.—This is an anatomical study of the development of the auditory receptor mechanism in the opossum. At birth the cochlear duct has made only half a turn and the organ of Corti has not begun to differentiate. No auditory response can be elicited until 50 days after birth. At this time the organ of Corti has attained the adult condition only in the second half of the first coil. The development of hearing function is correlated with anatomical development of the cochlea and the evidence obtained here supports the view that there is localization of function in the cochlea and that the highest notes are received near the base and the lowest notes near the apex.—D. J. Ingle (Mayo Clinic).
5241. Meyer, R. Korrelationen beim Augenmass. (Correlations in judgment of distance.) *Arch. ges. Psychol.*, 1936, 96, 70-102.—After extensive investigations with 72 persons, 100 trials with each person, of the ability to judge distance, the author obtained the following results: (1) there is a correlation of .71 between over-estimation toward the right and right-handedness; (2) there is a correlation of .83 between over-estimation toward the left and left-handedness; (3) there is no correlation between accuracy of vision and distance judgment; (4) there is no correlation between eidetism and distance judgment. The article is accompanied by tabulations.—A. B. Herrig (Michigan Central State Teachers College).
5242. Nogué, J. Essai d'une description du monde olfactif. (A description of the olfactory world.) *J. Psychol. norm. path.*, 1936, 33, 230-276.—The author discusses the objectivity of smells, the perception of space and time by the sense of smell, the psychological qualities of odors, and Henning's and Zwaardemaker's classifications of odors. He concludes that it is of no interest to look for chemical types corresponding to the different odors if by that we do not enter into a different sense area where other manipulations are possible which were not so in the olfactory domain itself.—R. E. Perl (New York City).
5243. Oppel, T. W., & Hardy, J. D. The stimulation of the end organs of the skin by radiation. *Amer. J. Physiol.*, 1936, 116, 116.—"The skin temperature changes produced by various quantities of radiation from the various sources have been studied. From these data the temperature change produced by a quantity of energy just sufficient to produce sensation

has been calculated. This temperature change was about  $0.001^{\circ}\text{C.}$  per second and could not be measured directly. The results show that the minimal amount of energy capable of producing sensation is about  $0.0086\text{ gm. cal./sec./cm}^2$  for visible light,  $0.0060\text{ gm. cal./sec./cm}^2$  for near infra-red, and  $0.0028\text{ gm. cal./sec./cm}^2$  for far infra-red. The surface temperature changes produced by these energies are approximately the same."—*T. W. Forbes* (N. Y. Psychiatric Institute).

5244. *Österberg, G. En synsprövetavle för børn.* (A vision test chart for children.) *Ugeskr. Laeg.*, 1936, 98, 711-714.—After critically evaluating existing charts for the testing of vision in children, such as Snellen's, Wolffberg's, and Löhlein's, the writer describes a chart constructed by himself, consisting of a series of pictures of familiar objects, which should correlate rather closely with Snellen's chart of letters. The test is published by Nyrop & Maag's Forlag, Copenhagen.—*M. L. Reymert* (Mooseheart Laboratory for Child Research).

5245. *Roose, J. Schwerhörigkeit und Stammelnen.* (Deafness and stammering.) *Int. Zbl. Ohrenheilk.*, 1934, 39. Pp. 25.—*R. R. Willoughby* (Brown).

5246. *Rubin, E. Haptische Untersuchungen.* (Cutaneous investigations.) *Acta Psychol.*, Hague, 1936, 1, 285-380.—In this experiment subjects judged the degree of curvature of the edge of a steel ruler, which could be either straight or curved so that the edge was part of a circle. The subject explored the edge of the ruler with his finger tips by moving either the forearm or the whole stretched arm. A judgment of the nature of the experienced edge was given after a sufficient number of movements had been made without visual cues. The judged curvature of the edge of the ruler was found to be related to the following factors: (1) the nature of arm movement, (2) the manner of tactual exploitation by the finger tips, (3) the variations in pressure on the finger tips, (4) the movements of the wrists, (5) accompanying visual images and experiences, (6) knowledge of the apparatus, and (7) accompanying tactual experiences. The significance of these facts to more general psychological and philosophical problems is discussed.—*K. U. Smith* (Rochester).

5247. *Rubin, M. A., & Hoagland, H. Some recent evidence for a humoral mechanism for peripheral sensory inhibition (adaptation).* *Amer. J. Physiol.*, 1936, 116, 133.—"The results here described, in addition to the earlier evidence, strongly support the hypothesis that cutaneous sensory adaptation is normally produced by the accumulation of K around the sensory nerve endings, which thus lowers their excitability by reducing the ratio of K inside the branching axon fibers to that outside."—*T. W. Forbes* (N. Y. Psychiatric Institute).

5248. *Scheidt, W. Eine neue Erklärung der Farbensehens.* (A new theory of color vision.) *Forsch. Fortsch. dtsh. Wiss.*, 1935, 11, 228.—Scheidt's theory is strictly mechanistic. Color sensations are due to tensions in the retinal elements situated at the periphery and consequently illumi-

nated to various degrees; and also to tensions between the peripheral elements on the one side and the nuclear and unilluminated elements on the other. Stimuli which produced color vision are effective only when light is distributed to the periphery. The nuclear portion is the part of the light-sensitive retinal layer lying entirely within the pre- and post-focal points of intersection of the light cone. The peripheral portion is the lateral focal space which is not focally illuminated.—*U. Dähnert* (Dresden).

5249. *Scheitz, W. Die Empfindlichkeit des Mundraumes gegenüber hohen Temperaturen.* (The sensitivity of the mouth areas to high temperatures.) Glauchau: Pickenhahn, 1935. Pp. 18.—*R. R. Willoughby* (Brown).

5250. *Steinberg, J. C. Discussion from the point of the physicist.* *Ann. Otol., etc., St Louis*, 1935, 44, 819-822.—Pure tones in the air do not mean pure tones in the ear because of the development of subjective harmonics. The measurement of subjective harmonics is discussed. The author points out the possible value of measuring hearing loss for sounds above the threshold as well as for sounds at the threshold.—*D. J. Ingle* (Mayo Clinic).

5251. *Stevens, S. S. The psychophysiology of pitch and loudness.* *Amer. J. Physiol.*, 1936, 116, 151-152.—"Pitch. The correspondence between the frequency of the stimulus and of the impulses in the auditory nerve must be considered irrelevant to the perception of pitch, because the correspondence breaks down at critical points. However, the regions of the basilar membrane which are resonant to different frequencies, determined by damaging the organ of Corti at various places and noting the effect on the electrical response, correspond with locations derived from an integration of recent data on differential sensitivity to pitch in human ears. Loudness. In the organ of Corti equal magnitudes of electrical potential are generated by tones (of different frequency and intensity) which sound equally loud to human observers, i.e., equal potential contours correspond to equal loudness contours. Furthermore, the size of the electrical potential at a constant frequency is the same function of the intensity of the stimulus as is the subjectively estimated loudness of the tone, except for an overload effect which appears in the electrical response at high intensities. As regards the auditory nerve, the notion that the total number of impulses passing along it determines the loudness of a tone must be modified in favor of the conception that loudness is due to the total number of active fibers."—*T. W. Forbes* (N. Y. Psychiatric Institute).

5252. *Tschermak-Seysenegg, A. Neues über Farbenblindheit in Theorie und Praxis.* (Recent theoretical and practical advances in the study of color blindness.) *Forsch. Fortsch. dtsh. Wiss.*, 1935, 11, 148.—Tschermak has improved the methods of studying color blindness through the use of a modification of Hering's leukoscope.—*P. Klimpel* (Leipzig).

5253. *Upton, M. Differential sensitivity in sound localization.* *Proc. nat. Acad. Sci., Wash.*, 1936, 22,

409-412.—"When two ears are stimulated by equal energies at a frequency of 800 cycles the apparent sound is localized in the median plane of the head. When the increments of energy necessary to cause a just noticeable difference of the localization of the apparent sound from the median plane are determined for a wide range of energy levels, the ratio  $\Delta I/I_1$  is found to be large for low levels of energy, small for intermediate levels and to increase for very high energy levels. When the ratio  $\Delta I/I_1$  is plotted against  $\log I_1$  the resulting curve is of the type which commonly describes differential intensity sensitivity."—F. S. Keller (Colgate).

5254. Upton, M., & Crozier, W. J. On auditory intensity discrimination. *Proc. nat. Acad. Sci., Wash.*, 1936, 22, 417-420.—"The mean just discriminable increment of intensity  $\Delta I$  was established in auditory experiments based upon apparent shift of localization of a centrally synthesized sound,  $I_1$  and  $I_2$  originating separately at the two ears. As in visual and other tests involving successive excitation of a single peripheral sensory field,  $\Delta I_m$  and  $P.E.\Delta I$  are directly proportional, and  $P.E.\Delta I$  is a rectilinear function of  $I_2$ . If the properties of  $\Delta I$  in a given case are to be taken as due to the properties of the mechanism of peripheral excitation, this can only be done to the extent that the statistical character of  $\Delta I$  is recognized. Specific mechanisms of peripheral excitation cannot be based upon the data of intensity discrimination."—F. S. Keller (Colgate).

5255. [Various.] Tone localization in the cochlea. *Ann. Otol., etc., St Louis*, 1935, 44, 736-837.—D. J. Ingle (Mayo Clinic).

5256. Wagner, R., & Zintl, H. Über die Schwingungsverteilung auf Membranen, die nach Art der Helmholtz'schen Basilar-membranen schwingen. 3, 4. (The allocation of vibration to the membranes which vibrate in the manner of Helmholtz' basilar membrane.) *Z. Biol.*, 1935, 96, 431-435; 436-444.—(*Biol. Abstr.* X: 10935).

5257. Wald, G., & Clark, A.-B. Sensory adaptation and chemistry of the retinal rods. *Amer. J. Physiol.*, 1936, 116, 157-158.—"The reactions initiated by light in the rods are described partly by the equations:

$\begin{array}{ccc} & \text{visible purple} & \\ \nearrow & & \nwarrow \\ \text{(a)} & & \text{(b)} \end{array}$

$\text{vitamin A} + \text{protein} \xleftarrow{\text{light}} \text{retinene} + \text{protein}.$

The two distinct processes which form visual purple (a and b) should correspond with two modes of dark adaptation. The equations indicate that these should be separated partly by the following procedure: If a completely dark adapted eye containing visual purple alone is brightly illuminated for a few seconds, considerable retinene is formed, but very little vitamin A. The succeeding dark adaptation should consist preponderantly of reaction (b). If, however, a dark adapted eye is exposed to light for a number of minutes, large amounts of retinene are converted to vitamin A, and the succeeding dark adaptation should consist to a greater extent of process (a). Consistent with these predictions, it is observed that between a

given initial and final threshold the rods may dark adapt along many different paths, depending upon the period of the preceding light adaptation."—T. W. Forbes (N. Y. Psychiatric Institute).

5258. Wegmann, I. Zu Frage der Schmerzempfindung in der Schwangerschaft. (The problem of pain sensitivity in pregnancy.) Gütersloh: Thiele, 1935. Pp. 27.—R. R. Willoughby (Brown).

5259. Wever, E. G., Bray, C. W., & Horton, C. P. Discussion from the point of view of animal experimentation. *Ann. Otol., etc., St Louis*, 1935, 44, 772-776.—In these experiments on stimulation deafness in guinea pigs the animals were subjected to an intense tone for about ten hours daily. The auditory sensitivity was determined by the conditioned response method both before and after exposure. Five of these animals were studied later by recording the electrical effects produced in the cochlea during stimulation by sound. Sensitivity curves were also obtained for five control animals. There was a general rather than a specific impairment of hearing as a result of prolonged stimulation with a single intense tone, and no indication of any specific localization of such tones in the cochlea. It is probable that intensities of 100 db. or more involve the entire basilar membrane and its allied structures.—D. J. Ingle (Mayo Clinic).

5260. Winsor, C. P., & Clark, A.-B. Dark adaptation after varying degrees of light adaptation. *Proc. nat. Acad. Sci., Wash.*, 1936, 22, 400-404.—"The shape of the human dark adaptation curve changes with changes in the degree of initial light adaptation. The changes are inconsistent with the assumption of a mechanism in which the active material exists in only two states. The results are consistent with Wald's mechanism in which three states are postulated."—F. S. Keller (Colgate).

5261. Woerdeman, H. L'influence de la teneur en vapeur d'eau d'un gaz odorant sur la sensation olfactive. (The influence of percentage of an odorous gas in water vapor on olfactory sensation.) *Arch. néerl. Physiol.*, 1935, 20, 591-595.—There is a considerable difference in the intensity of the odor of isoamyl acetate depending on whether it is presented in dry or in humid air. Dry air gives the more intense sensations.—C. P. Stone (Stanford).

5262. Wright, W. D. The breakdown of a color match with high intensities of adaptation. *J. Physiol.*, 1936, 87, 33-34.—The breakdown in a match between yellow and a mixture of red and green is due to the receptor process itself. "In an appendix, the author replies to a recent criticism by Hecht of the author's interpretation of some results obtained on intensity discrimination. It is shown that Hecht has misapplied the formulae of his photochemical adaptation mechanism, and the author's contention that adaptation and intensity discrimination are independent and involve fundamentally distinct mechanisms is confirmed."—M. A. Rubin (Clark).

[See also abstracts 5212, 5295, 5305, 5307, 5313, 5357, 5358, 5361, 5362, 5364, 5366, 5370, 5372, 5373, 5376, 5402, 5478, 5502, 5570.]

## FEELING AND EMOTION

5263. Chen, H. P. [A new method of experimenting on human emotions: a comparison of Luria's method of associated motor reactions and Chou's method of simultaneous voluntary maintenance of exposure.] *Educ. Rev. (Chinese)*, 1935, 25, No. 11, 61-71.—The author points out that the fundamental difference between Luria's method (which has been designed for the study of the nature of human conflicts or emotion, conflict and will) and Chou's method (which has been designed primarily for the study of reading of Chinese characters but which, as we now know, may also be employed to study the nervousness or instability of personality) lies in the fact that in the former when there is given a word-stimulus the subject is required to answer by another word and simultaneously to press a pneumatic bulb with the fingers of the right hand, the left hand remaining passive on a weight, while in the latter the subject himself opens the window of a quadrant tachistoscope by pressing a key, reads aloud what is exposed and then lets the window close itself by releasing his finger from the key. Our question is: which kind of these two motor reactions—pressing or releasing the finger—is better, or are they equally good for the study of human emotions? According to the present author, although there is still lack of exact evidence of any sort, yet we may make a tentative evaluation of these two methods in the light of existing psychological knowledge. He points out that since the reaction of pressing the finger is positive in nature, while reactions under Luria's experimental conditions are of the fear and escape type, so Chou's method of releasing the finger, which is negative in nature, would be more suitable for studying the disturbance in reactions under the conditions of emotional excitation or mental conflict. Moreover, the reaction of releasing the finger somewhat intensifies the attention of the subjects experimented on. Again, Chou's method of presenting the word-stimulus by means of a tachistoscopic exposure is better than Luria's method of oral presentation, for the former can avoid the uncontrolled effects of the loudness, intensity and duration of speaking. Besides, there seems to be no criterion of learning of coordination between the associated speech reaction and the finger reaction. Thus the author concludes that if Luria's technique were supplemented by Chou's method it would become much more effective for the study of emotional behavior.—C.-F. Wu (Nat. Res. Inst. Psychol., Acad. Sinica, Nanking).

5264. Nice, L. B., & Fishman, D. The changes in the specific gravity of the blood of pigeons during emotional excitement. *Amer. J. Physiol.*, 1936, 116, 114.—"The blood was obtained from a puncture of a wing vein of each bird in the quiet state and the specific gravity measured by means of the falling drop method of Barbour and Hamilton. After having determined the specific gravity, the pigeon was then excited by stimulation with a weak faradic current. . . . It was found that a definite increase in the specific gravity of the blood of each one of our 28

pigeons took place after excitement. In the quiet state the specific gravity averaged 1.0524 and after excitement 1.0548. This gives an average increase of 0.0024 in the specific gravity after excitement."—T. W. Forbes (N. Y. Psychiatric Institute).

5265. Rochon-Duvigneaud, A. Émotion provoquée par un souvenir inconscient. (Emotion caused by an unconscious remembrance.) *J. Psychol. norm. path.*, 1936, 33, 283-285.—The author describes a very severe emotional reaction which he has at the sight of a colored picture of a certain flower. He could not understand the cause of his excitement until, one day, the flower appeared to him in its natural setting and he remembered an event of long ago which explains his emotional reaction.—R. E. Perl (New York City).

[See also abstracts 5511, 5566.]

## ATTENTION, MEMORY AND THOUGHT

5266. Binswanger, L. Zum gegenwärtigen Stand der Lehre von den Wortfindungsstörungen. (The present status of the theory of disturbances in word-finding.) *Schweiz. Arch. Neurol. Psychiat.*, 1935, 36, 52-57.—The new studies of Lotmar appear to leave this problem still unsettled. It demands, beyond pure experiment, the consideration of a noetic factor, i.e. attention.—P. Krieger (Leipzig).

5267. Hess, F. Umstellungsfähigkeit und Perseveration. (Transposition ability and perseveration.) *Untersuch. Psychol. Phil.*, 1935, 9, Pp. 55.—R. R. Willoughby (Brown).

5268. Laird, D. A. A study in hemastatics: mental addition with altered brain circulation from body inversion. *Med. Rec., N. Y.*, 1936, 144, 118-119.—With six normal male subjects in a recumbent position the speed and the accuracy of mental addition were increased respectively 7.4% and 14.1% by the elevation of the feet one foot higher than the head, thus permitting an increased gravitational flow of blood from the splanchnic area to the brain.—M. H. Erickson (Eloise Hospital).

[See also abstracts 5216, 5440.]

## NERVOUS SYSTEM

5269. Barron, D. H., & Matthews, B. H. C. Electrotonus in ventral roots of the spinal cord. *J. Physiol.*, 1936, 87, 26-27P.—Slow and impulse potentials are recorded from the ventral roots of frog, cat, and monkey. The picture is similar to that reported earlier by the authors for the dorsal roots.—M. A. Rubin (Clark).

5270. Barry, D. T. The afferent paths of impressions set up by irritant gases in the respiratory passages. *Arch. int. Pharmacodyn.*, 1934, 48, 97-111.—(*Biol. Abstr. X*: 13202).

5271. Boeke, J. Die periphere Endausbreitung des sympathischen Systems. (The peripheral end branchings of the sympathetic system.) *Nova Acta Leop. Carol.*, 1935, 2, 209-257.—R. R. Willoughby (Brown).

5272. Bogue, J. Y., & Rosenberg, H. Excitability of sensory fibers in *Maia* nerve. *J. Physiol.*, 1936, 87, 67-73.—The timer interval between a make of a constant current and the beginning of the action potential wave in non-medullated sensory fibers of *Maia* is 23-74 msec. at rheobasic and 6-13 msec. at double rheobasic strength. The voltage/make-response time relation follows Weiss's equation.—*M. A. Rubin* (Clark).
5273. Bogue, J. Y., & Rosenberg, H. Electrical responses of *Maia* nerve to single and repeated stimuli. *J. Physiol.*, 1936, 87, 158-181.—The results of a detailed study of the action-potential waves from the limb nerve of the crab *Maia* are reported.—*M. A. Rubin* (Clark).
5274. Bouman, H. D. "Curarization" by strychnine. *J. Physiol.*, 1936, 87, 25P.—On soaking nerves in Ringer's solution containing both strychnine and four or more times the normal amount of potassium, curarization resulted as usual, but no change in the nerve chronaxy was found.—*M. A. Rubin* (Clark).
5275. Bratu, I. Phénomènes du nerf vagosympathique (grenouille). (Phenomena of the vagosympathetic nerve in the frog.) *Bul. Fac. Sti. Cernăuți*, 1934 (1935), 8, 309-312.—(*Biol. Abstr.* X: 13204).
5276. Brown, G. L., Dale, H. H., & Feldberg, W. Chemical transmission of excitation from motor nerve to voluntary muscle. *J. Physiol.*, 1936, 87, 42-43P.—Acetylcholine causes excitation of mammalian muscle when access is sufficiently rapid. Eserine injected into a spinal cat causes the tension of a gastrocnemius twitch in response to a single maximal motor nerve volley to increase by as much as 130%. Eserine does not have this effect on denervated or fully curarized muscle.—*M. A. Rubin* (Clark).
5277. Cate, J. ten. Weitere Beobachtungen an Kaninchen nach beiderseitiger Exstirpation der Area striata. (Further observations on rabbits following bilateral extirpation of the area striata.) *Arch. néerl. Physiol.*, 1935, 20, 467-476.—In this article the author gives further evidence that rabbits after complete extirpation of the area striata on both sides of the brain can react to light stimuli and by virtue of this can avoid obstacles. Also following bilateral extirpation of the area striata conditioned reflexes, connected with the search for food, may be set up to purely optical stimuli.—*C. P. Stone* (Stanford).
5278. Cowan, S. L. The effects of drugs on transmission from nerve to voluntary muscle and "accommodation" to different rates of destruction of the chemical transmitter. *J. Physiol.*, 1936, 87, 43-45P.—Wedensky inhibition observed when the nerve to a frog's sartorius muscle is stimulated 150 times per second is accounted for by the local threshold concentration and the rate of destruction of the chemical transmitter (acetylcholine).—*M. A. Rubin* (Clark).
5279. Dale, H. Pharmacology and nerve-endings. (Walter Ernest Dixon memorial lecture.) *Proc. R. Soc. Med.*, 1935, 28, 319-332.—(*Biol. Abstr.* X: 13211).
5280. Fredericq, H. Fonctionnement du pneumogastrique cardiaque de la tortue: excitabilité, sommation et théorie neurohumorale. (Functioning of the cardiac pneumogastric in the turtle; excitability, summation, and a neurohumoral theory.) *Arch. int. Physiol.*, 1934, 40, 227-242.—(*Biol. Abstr.* X: 13217).
5281. Gasser, H. S. Potentials in mammalian A fibers. *Amer. J. Physiol.*, 1936, 116, 57.—"Through the sharp positive after-potential mammalian A fibers are placed in contrast with frog A fibers, in which the positive after-potential is small or even absent after single responses, and brought more into line with C fibers of both forms. Compared with C fibers, the positive after-potential is much smaller, however. . . . The negative after-potential, on the other hand, even under the best conditions of isolation, is larger, although the capacity for developing negative after-potential is not as large. Mammalian C fibers, like frog C fibers, when veratrinized can produce a negative after-potential as large as the recorded height of the spike."—*T. W. Forbes* (N. Y. Psychiatric Institute).
5282. Gerard, R. W., & Magoun, H. W. Influence of potassium and calcium on motor discharges. *Proc. Soc. exp. Biol.*, N. Y., 1936, 34, 755-756.—The intensity and duration of motor sequelae of cerebellar stimulation in cats were measured before and after injections of potassium chloride, calcium chloride, and sodium citrate. After the potassium injections responses were prolonged about 230%; after calcium, they were decreased 51%; and after citrate they increased 10-20%. Intensity paralleled duration.—*H. Peak* (Randolph-Macon).
5283. Grünthal, E. Über Unterschiede im Gehirnbau der Anthropoiden und des Menschen und das eigentlich Menschliche am Gehirn. (The differences in brain structure in anthropoid apes and man, and the essentially human characteristics of the brain.) *Fortschr. Neurol. Psychiat.*, 1936, 8, 261-284.—The author presents a theoretical discussion and a comparative study of the work done on the topography of the brain in various mammals, in particular anthropoid apes and human beings. Basing his conclusions on the work of Brodman, Mauss, Campbell, and E. Beck, he compares the different areas of the cerebrum in respect to size, position and other characteristics. A second section of the article is concerned with a comparative study of the between-brain. Tables show the differences of the coefficient between hypothalamus length and cerebrum length in the various mammals, and the numerical differences in thalamus nuclei between human beings and other mammals. There are five diagrams and a bibliography.—*D. S. Oberlin* (Delaware State Hospital).
5284. Herren, R. Y., Travis, L. E., & Lindsley, D. B. The effect of lesions in the central nervous system of the rat upon reflex time. *J. comp. Neurol.*, 1935, 63, 241-250.—The effects of lesions in the central nervous system upon the Achilles and crossed dorsiflexion reflex latencies were studied. Latencies were electromyographically determined. Crossed

dorsiflexion reflex latency was not altered by lesions in the cerebral hemispheres, cerebellum, corpus striatum and caudate nucleus or by complete transection of the spinal cord. Several different effects upon Achilles reflex latencies were caused by these same lesions.—C. P. Stone (Stanford).

5285. Hoagland, H. Electrical brain waves and temperature. *Science*, 1936, 84, 139-140.—A plot according to the Arrhenius equation of frequencies of the alpha cycles as a function of absolute temperature is given for patients whose temperature was elevated by diathermy. Data for some normal and one multiple-sclerotic case are given. The three  $\mu$  values (8000, 11000, and 16000) are unquestionably independent, as shown by the three distinct slopes of the lines. The variability apparently increases with the advancement of general paresis. The relative variability is constant over the temperature range for each graph. The findings by Jasper are said to substantiate the author's.—R. Goldman (Worcester State Hospital).

5286. Katz, B. The time-factor of accommodation and repetitive response in the nerves of cooled frogs. *J. Physiol.*, 1936, 87, 23P.—M. A. Rubin (Clark).

5287. Loo, Y. T. The cerebral cortex of a Chinese brain (VI & VII). *Monogr. nat. Res. Inst. Psychol., Shanghai*, 1935, Ser. No. 8. Pp. 80.—This monograph continues to describe in detail the cytoarchitectonics and myeloarchitectonics of the occipital and temporal lobes of the same Chinese brain used in the studies of the frontal lobe (see VIII: 2468) and the parietal and insular lobes (see VIII: 5837). Concerning the occipital lobe, it was found that cytoarchitectonically the occipital areas in the Chinese brain are more granular and the cells are more densely distributed than in the European brain. Myeloarchitectonically, not much difference has been found between the Chinese brain and the European brain as described by Vogt. The transition from area OA to OC is not associated with any fluctuational change in the total thickness of the cortex in the Chinese brain; while in the European brain, the intermediate area OB between OA and OC reveals a decrease of thickness so far as Economo-Koskinas' measurements are concerned. In general, when the percentage of different layers of the occipital areas in the Chinese brain were compared with those in the European brain calculated from Economo-Koskinas' data, there was not much difference between the two kinds of material. All the occipital areas studied in the Chinese brain contain similar proportions of cell numbers in the different layers as in the European brain, except that area OA contains slightly more cells. On the whole, the difference in the size of cells in different layers of the occipital cortex between the two kinds of brain is not very striking. Concerning the temporal lobe, it was found that a careful examination of the various representative areas in this lobe of the Chinese brain as compared with those of the European brain reveals that almost all areas in both races give the same cytoarchitectonic pictures. In area TC the lamination or cell stratification seems to be more distinct and the

cortex less granular in the Chinese brain. Generally speaking, the temporal cortex is slightly thinner in the Chinese brain, except area TA. The proportion of the external to the internal principal layers is sometimes higher (areas TB, TE, and TG) and sometimes lower (areas TA, TC, and TF). The number of cells is in most cases slightly greater in the Chinese brain, and the size of cells slightly smaller. All these comparisons were made with the values obtained from Economo-Koskinas' tables. Myeloarchitectonically, areas TA, TB, TC, and TG of the Chinese brain are not much different from those of the European brain described by Vogt and Beck. The tangential fibers are present in almost every area. The stria Kaes-Bechterewi is also common to most of the areas except TF and TG, so far as the present observations have reached. The stria Baillarger externa is present in all of these areas, and the stria Baillarger interna is absent only in area TG. The radiate bundles reach about the IIIc zone. The myelinated fibers are generally thinner than those observed in the occipital and frontal lobes. Most of these areas contain more fibers in the external than in the internal Baillarger's stria. 20 plates (figs. 53-72) depicting the different areas of the occipital and temporal lobes under consideration are given.—C.-F. Wu (Nat. Res. Inst. Psychol., Acad. Sinica, Nanking).

5288. Loo, Y. T. The cerebral cortex of a Chinese brain (VIII, IX, X). *Monogr. nat. Res. Inst. Psychol., Shanghai*, 1935, Ser. No. 9. Pp. 34.—This monograph covers a general review (VIII), discussions (IX), and conclusions (X) of the author's work on the cytoarchitectonics and myeloarchitectonics of a Chinese brain (see VIII: 2468, 5837; X: 5287). He concludes: "(1) Cytoarchitectonically, in the Chinese brain the frontal areas are more granular; the parietal areas are less granular, different layers are more distinct, and the infra-granular layers are thinner; the insular areas are thicker and more distinct in cell lamination; the occipital areas are more granular; and the temporal areas are less granular (in comparison with Economo-Koskinas' descriptions on the European brain) and more distinct in cell stratification. The cytoarchitectonic differences lie mostly in the II and III layers, in other words, the supragranular layers. (2) Myeloarchitectonically, the tangential fibers in the I layer prevail almost everywhere. The stria Kaes-Bechterewi has slight indication in area PF, but mostly in the temporal areas. The fibers in general are more abundant for the frontal lobe in those areas nearer to the central fissure and less near the frontal pole; for the parietal lobe more abundant in the areas near the central fissure and the occipital lobe; for the insular lobe, very poor; for the occipital lobe quite abundant, particularly the stria of Gennari in area striata (OC); and for the temporal lobe they are abundant but fine in caliber, with marked Kaes-Bechterewi in IIIa. Comparisons with the European brain are available only for a few areas. (3) The III and VI layers in the Chinese brain contain slightly more cells per (0.1 mm)<sup>2</sup> on the average than in the European brain; while the others contain almost the same amount. (4) The pyramidal cells in the deep

portion of the III layer are slightly larger in the Chinese brain." The works of Kurz, Shellshear, Kappers, and Bork-Feltkamp have been reviewed and discussed, and it is concluded that histologically the cerebral cortex of the Chinese brain is neither of lower organization, nor more anthropoid, nor fetalized. The anthropology of the Chinese brain, both macroscopic and microscopic, has also been discussed; and further research works on the histology of the Chinese brain are suggested.—C.-F. Wu (Nat. Res. Inst. Psychol., Acad. Sinica, Nanking).

5289. Lucas, A. M. & Miksicek, J. E. Nerve cells without central processes in the fourth spinal ganglion of the bullfrog. *Science*, 1936, 84, 207-208.—From studies of serial sections of the fourth spinal nerve, roots, ganglion, adjacent sympathetic trunks, rami and celiac nerve stained by silver and osmic methods the following conclusions are reached: "(1) that practically all the neurons whose fibers pass out the communicating ramus to the celiac nerve have their cells of origin in the dorsal root ganglion, and (2) that nearly all these neurons lack central processes extending to the spinal cord by way of the dorsal root."—F. A. Mole, Jr. (Brown).

5290. McCulloch, W. S., & Dusser de Barenne, J. G. Action potentials of the cerebral cortex and spinal cord before and after cortical stimulation. *Amer. J. Physiol.*, 1936, 116, 99.—"Last year we reported that electrical stimulation of the motor cortex extinguished response to appropriately timed subsequent stimulation of the same focus, and demonstrated that extinction was due to local inactivation of that focus, all evidence implicating the large and giant pyramidal cells at the site of stimulation, whereas facilitation appears when the motor cortex is absent. . . . Two stages of direct coupled amplification, disconnected from the specimen during stimulation, were used with concentric Ag-AgCl-Cl-agar electrodes, the central (a capillary) connected to the grid, the circumferential (4 mm. internal, 6 mm. external diameter), to the cathode. . . . Cortical action potentials so obtained are diminished after extinguishing stimulation. They return very slowly. The more profound and protracted the extinction, the more profound and protracted is the diminution. With no extinction appears no diminution. With the central electrode 5 millimeters in the cord, the circumferential on the dura, the spinal action potentials are augmented after extinguishing bipolar stimulation of the corresponding cortical focus. They diminish slowly to their original size. Together these findings confirm the spatial separation of two factors, one for extinction and the other for facilitation, co-efficient in determining the size of motor responses to second stimulation of a single cortical focus."—T. W. Forbes (N. Y. Psychiatric Institute).

5291. Morison, R. S., & Rioch, D. McK. Influence of the forebrain on the reflex responses of the nictitating membrane of the cat. *Amer. J. Physiol.*, 1936, 116, 111.—The effects of destruction in various cortical and subcortical locations on the response to stimulation of the nictitating membrane are catalogued.—T. W. Forbes (N. Y. Psychiatric Institute).

5292. Neild, H. W., Elhardt, W. P., Wickwire, G. C., Orth, O. S., & Burge, W. E. A comparison of the effect of different anesthetics on the electrical potential of the cerebral cortex. *Amer. J. Physiol.*, 1936, 116, 113-114.—"The sciatic nerve of a dog, anesthetized with ether, was exposed, as well as a portion of the cerebral cortex, by the removal of a piece of the cranium and the meninges. One non-polarizable electrode was placed against the cortex of the brain and another against the sciatic nerve. A delicate galvanometer was connected with the electrodes. The cortex of the brain of dogs slightly anesthetized with either nitrous oxide, ethylene, ether or chloroform was found to be electronegative. . . . An increase in the depth of anesthesia by all four of these anesthetics brought about a decrease in the negative potential of the cortex of the brain . . . but only ether caused a reversal in polarity. . . . It was found difficult with the use of any of these anesthetics to decrease the negative potential of the cerebral cortex of a dog partially intoxicated with ethyl alcohol. . . . However, large intoxicating doses of alcohol, like the other anesthetics, were found to decrease the negative potential of the cortex of the cerebrum, and in fact to produce a reversal in polarity."—T. W. Forbes (N. Y. Psychiatric Institute).

5293. Nichol森, H. C., & Sobin, S. Effects of local chemical applications to the floor of the fourth ventricle. *Amer. J. Physiol.*, 1936, 116, 114-115.—"These experiments have been performed upon dogs lightly anesthetized with morphine and urethane. Applying a small piece of filter paper soaked in one or two per cent cocaine solution, or applying a small amount (0.01 to 0.04 cc.) of such a solution to the floor of the fourth ventricle in the region of the calamus scriptorius depresses respiration. This depression is evidenced chiefly by a decrease in amplitude of respiration which is occasionally so marked as to cause apnea. The effects on respiratory rate are less marked. . . . Cocaine produces these effects with either intact or blocked vagi. Blocking the vagi has the same effects following the application of cocaine as before its application. Stimulation of the central end of a blocked vagus is apparently equally effective in inhibiting respiration before and after the application of cocaine."—T. W. Forbes (N. Y. Psychiatric Institute).

5294. Otenasek, F. J., & Lilienthal, J. L. Decor-ticate polypneic panting and sham rage in the cat: their separate central mechanisms in the diencephalon. *Amer. J. Physiol.*, 1936, 116, 117.—"Decorticate sham rage is dependent upon the ventro-caudal portion of the diencephalon (Bard, 1928). Our acute experiments show that sham rage and polypneic panting develop after a frontal transection which leaves intact the caudal fourth of the diencephalon. Neither occurs when the transection is caudal to the level of transition between diencephalon and mesencephalon. In such decerebrate animals heating produces an elevation of respiratory rate but does not induce true panting. When the section passes from the anterior edges of the superior colliculi to any points between the chiasm and a level 1 mm.

rostral to the mammillary bodies sham rage develops without polypneic panting. Typical decorticate polypneic panting without sham rage has followed sections beginning 3 mm. rostral to the pineal and striking the base through the middle of the mammillary bodies. It is concluded that the central mechanism responsible for decorticate polypneic panting is separate from and located within the diencephalon dorsal to the mechanism concerned in sham rage."—T. W. Forbes (N. Y. Psychiatric Institute).

5295. Penard, S. Zur Frage der Beziehungen zwischen Sehrinde und primären optischen Zentren auf Grund von experimentellen Studien an Affen. (The problem of the relations between the visual cortex and the primary optic centers: experimental studies on monkeys.) *Schweiz. Arch. Neurol. Psychiat.*, 1935, 36, 131-163.—A continuation of v. Monakow's studies. The conclusions are: The cortical representation area of the external geniculate bodies corresponds with the area striata. A distinct anatomical and physiological projection connects the two levels. The occipital cortex is connected with the phylogenetically old optic centers—the anterior corpora quadrigemina—chiefly through centrifugal fibers. The cortical representation area of the pulvinar takes in both the area striata and the parieto-occipital region.—P. Krieger (Leipzig).

5296. Penfield, W. The influence of the diencephalon and hypophysis upon general autonomic function. *Canadian med. Asso. J.*, 1934, 30, 589-598.—(*Biol. Abstr.* X: 10943).

5297. Perkins, F. T. A genetic study of brain differentiation by the action current method. *J. comp. Psychol.*, 1936, 21, 297-323.—Oscillograph records were taken from various regions of the brains of crayfish, frogs, snakes, pigeons, and rats, while these animals were being subjected to such stimuli as a flash of light, tapping on leg or back, hitting on eye, acid on skin, etc. The data presented in the article concern the amplitude of the oscillograph records taken from various parts of the brain. No consistency is apparent for any given type of stimulation from one animal form to another. The author's conclusions are to the effect that earlier data disproving localization of function are confirmed, that "a dynamic, gradient, or field-structure theory is at all points substantiated and supplemented," that there is a shift from homogeneity to heterogeneity as one ascends the animal scale, that higher heterogeneity is characterized by the invariable presence of gradients, that various parts of the cortex seem to have more than one function, and that "In general, the results support the organismic interpretation of Bartley, Perkins, Child, Coghill, Lashley and Wheeler." Bibliography and sample records.—N. L. Munn (Peabody).

5298. Peugnet, H. B., & Coppee, G. E. Effects of strychnine on peripheral nerve. *Amer. J. Physiol.*, 1936, 116, 120-121.—"Method. Electron oscillograph; excised sciatic-digital nerves of *Rana pipiens*, permitting study of single alpha axon responses.

Strychnine sulphate in bicarbonate-free Ringer. Results. Strength-duration curves: Rheobase generally lowered by concentrations less than 1:1,000,000; generally raised by stronger solutions. Changes of chronaxie were haphazard and unrelated to concentration. Cathodal polarization curves usually showed augmentation of depression phase, with stronger solutions. Action potential: (single alpha axons) concentrations above 1:1,000,000 invariably lowered spike potential (approximately 50 per cent normal at block) and increased total duration (maximum 2-3 times normal). Duration increase is greater than can be explained by slowed conduction, since the potential at the poisoned lead outlasts that of the unpoisoned diphasic element, resulting in an upright T wave. Conduction slowed by 1:100,000; always blocked by 1:500, and frequently by 1:10,000; always in 15 to 30 minutes."—T. W. Forbes (N. Y. Psychiatric Institute).

5299. Pike, F. H. Cerebellar symptoms from unsymmetrical lesions after median longitudinal section of the decussations of Forel and of the superior brachium. *Amer. J. Physiol.*, 1936, 116, 121.—"The midbrain of a cat was incised in approximately the median line from the nucleus of the third cranial nerve (which was involved more on the right side than on the left) to nearly the level of origin of the eighth. At the same time about two-thirds of the left cerebellar hemisphere was excised. The immediate effects were severe, and it was nearly a month before the animal could get about at all by itself. At the end of a year it walked about freely with a slow deliberate gait, climbed up on objects into which it could sink its claws, jumped from a moderate height and broke its fall, and cleaned its coat. The great reduction in all motor activity, as compared with a control animal, was apparent. . . . Median section of the decussation of the superior cerebellar peduncle had not completely abolished its functional outflow. Wherever else it may have gone, this outflow could not have exerted its effect through the crossed rubrospinal tract."—T. W. Forbes (N. Y. Psychiatric Institute).

5300. Pumphrey, R. J. Slow adaptation of a tactile receptor in the leg of the common cockroach. *J. Physiol.*, 1936, 87, 6-7P.—Adaptation is described of the impulses set up by movement of the thick spiny hairs on the fourth segment of the leg of the cockroach. The rate of adaptation of these receptors is much slower than that of the finer hairs. The author suggests that these slowly adapting receptors may serve as proprioceptors.—M. A. Rubin (Clark).

5301. Pumphrey, R. J., & Rawdon-Smith, A. F. Synchronized action potentials in the cercal nerve of the cockroach (*Periplaneta americana*) in response to auditory stimuli. *J. Physiol.*, 1936, 87, 4-5P.—The physiological responses of the primitive "ear" of the cockroach bear many resemblances to the phenomena found in the mammalian cochlea.—M. A. Rubin (Clark).

5302. Rabic, J. Die neuen Anschauungen über die Beziehungen der Sehnenreflexe zum Bewegungsvorgang. (New viewpoints on the relations of the

tendon reflexes to the movement process.) Mulhouse: Brinkmann, 1935. Pp. 24.—R. R. Willoughby (Brown).

5303. Rademaker, G. G. J. Über die Verrichtungen des Kleinhirns. (The functions of the cerebellum.) *Psychiat. neurol. Bl., Amst.*, 1934, 5, 814-827.—(*Biol. Abstr.* X: 13223).

5304. Rosenblueth, A., Davis, H., & Rempel, B. The electrograms of the pilomotor muscles. *Amer. J. Physiol.*, 1936, 116, 131-132.—"When either of the leads is inserted at a given point in the tail and the other is placed in successive positions describing a semicircle around it, beginning cephalad and ending caudad, the electric responses first decrease in magnitude until they disappear when the two needles occupy a plane perpendicular to the longitudinal axis of the tail. They then reappear and increase, but reversed in polarity, so that at the end a mirror image of the first response is obtained. The magnitude of the electrograms is proportional within limits (10 to 15 cm.) to the distance between the needles along the longitudinal axis. It is concluded that the electrograms denote an oriental asymmetric depolarization of the muscle cells between the electrodes and that they are additive in series."—T. W. Forbes (N. Y. Psychiatric Institute).

5305. Ruch, T. C., & Fulton, F. J. Somatic sensory function of the cerebral cortex in the monkey and chimpanzee. *Amer. J. Physiol.*, 1936, 116, 134-135.—"In the monkey, single lesions of the parietal association area (Brodmann area 7), the postcentral gyrus (areas 3, 1, 2, and 5), and the motor area (incomplete anteriorly) fail to reduce the accuracy of weight discrimination. . . . However, a lesion which includes the posterior parietal lobe in addition to the postcentral gyrus induced a gross initial loss of sensory ability which lessened but persisted with extensive retraining. A bilateral parietal lobectomy and destruction of the anterior wall of the central sulcus reduced but did not abolish the ability to discriminate inclined planes in total darkness. These experiments suggest that somatic sensory functions are widely rather than focally represented in the cerebral cortex of the monkey and that the thalamus suffices for gross discrimination. The effect of unilateral ablation of the postcentral gyrus upon the ability of the chimpanzee to discriminate degrees of roughness (emery paper) has been studied. . . . In the chimpanzee the postcentral gyrus is an important sensory area but apparently forms only a part of the cortical representation of discriminative sensibility in the tactual sphere. These observations point to a progressively greater degree of encephalization and concentration of representation of somatic sensory function in the primate series."—T. W. Forbes (N. Y. Psychiatric Institute).

5306. Sealy, W. B., & Witcher, S. L. [The effect of] Sympathetic denervation upon peristalsis of the cat small intestine *in situ*. *Proc. Soc. exp. Biol., N. Y.*, 1936, 34, 806-807.—Fluoroscopic observation of 6 cats before and after sympathetic denervation of the small intestine and adrenals results in the con-

clusion that this operation reduces by about 52% the average time for barium sulphate suspension to reach the caecum from the stomach.—H. Peak (Randolph-Macon).

5307. Smith, K. U. The postoperative effects of removal of the occipital cortex upon visual intensity discrimination in the cat. *Amer. J. Physiol.*, 1936, 116, 145-146.—"Measurements at the low and high differential intensity levels on five animals, four with partial lesions of graduated size and one with complete removal of the striate cortices, gave small but insignificant indications of threshold loss." With complete destruction of the striate areas "three animals, trained in the discrimination habit under all three conditions of general illumination prior to the operations, relearned the discrimination of the stimuli under the low conditions of general illumination after the operations. In comparison, after the operations two animals failed to relearn the second and all three failed to relearn the third habit after the operations. One control animal, with complete removal of the visual cortex on one side only, quickly relearned the discrimination of the two lights under all three conditions of general illumination after the operation."—T. W. Forbes (N. Y. Psychiatric Institute).

5308. Speidel, C. C. Studies of living nerves. V. Alcoholic neuritis and recovery. *J. comp. Neurol.*, 1936, 64, 77-114.—The immersion of living frog tadpoles in dilute solutions of alcohol causes nerve irritation. Practically any grade of neuritis can be induced by controlling the strength of solution and duration of treatment. Direct recordings of the principal changes in nerve fibers during alcoholic neuritis by cinephotography suggest that slight retractions of nerve endings probably take place at some nerve synapses within the brain and spinal cord of alcoholized animals. Such retraction would interfere with perfect coordination. Mild daily intoxication of brief duration, though continued for several weeks, causes little damage to the nerves or their sheaths.—C. P. Stone (Stanford).

5309. Spiegel, E., & Spiegel-Adolf, M. Physicochemical mechanisms in convulsive reactivity. *Proc. Soc. exp. Biol., N. Y.*, 1936, 34, 799-800.—The permeability of brain tissue in cats and rabbits was determined by finding the difference in conductivity of the surfaces at high and low frequencies of alternating currents. Observations were made of the effects on permeability of agents such as asphyxia, anemia, changes in intracranial pressure, and anesthetics. It is concluded that epileptogenous agents may act on the nervous system by (1) change in ion concentration of the surfaces of nerve cells, and/or (2) diminution of the density of cellular surface films.—H. Peak (Randolph-Macon).

5310. Thompson, I. M., & Kimball, H. S. Effect of local ischemia upon human nerve fibres *in vivo*. *Proc. Soc. exp. Biol., N. Y.*, 1936, 34, 601-603.—Ischemia was induced in forearm and hand by inflating to a pressure of 160 mm. a sphygmomanometer applied above the elbow. Median, ulnar, or radial

nerves were stimulated at the wrist by 160 cycle A.C. and thresholds for shock determined at 2 minute intervals for 16 minutes. In 8 of 13 experiments on 4 subjects it is indicated that "ischemia first increased and later diminished the irritability of those fibres first stimulated by a current increasing from zero." It is thought that this effect is due to asphyxia.—*H. Peak* (Randolph-Macon).

5311. Tower, S. S. Extrapyramidal activity of the cat's cerebral cortex: motor and inhibitory. *Amer. J. Physiol.*, 1936, 116, 155.—"Relaxation of tonic contraction has been obtained only from the pre- and post-cruciate gyri. . . . Repetitive movements such as running, clawing, striking, nystagmus, licking and chewing, breathing and tail wagging have been slowed or stopped, temporarily or permanently, by stimulating either the gyrus preceus, or over a large field in the sylvian region. During such stimulation the animal appeared fixed at attention, eyes front, head raised, forelegs extended, hindlegs extended or semiflexed, tail out straight. The extrapyramidal motor activities of the cortex include the usual adhesive mechanisms, frontal and occipital for the eyes, temporal for the ears, and superior parietal for head and trunk. Moreover, each of these may also evoke complex purposive movements of the extremities."—*T. W. Forbes* (N. Y. Psychiatric Institute).

5312. Uprus, V., Galor, J. B., & Carmichael, E. A. Localized abnormal flushing and sweating on eating. *Brain*, 1934, 57, 443-453.—A study of the innervation concerned.—(*Biol. Abstr.* X: 8335).

5313. Wang, G. H., & Lu, T. W. Action potentials in visual cortex and superior colliculus induced by shadow movement across the visual field. *Chin. J. Physiol.*, 1936, 10, 149-170.—Further experiments on the action potentials in the visual cortex and superior colliculus in the rabbit disclosed two types of shadow movement effect. With a large shadow which completely interrupted the stimulating light for a moment, a potential change occurred in both the cortical and the tectal visual centers. With a shadow which did not cut off all the light momentarily, a potential change was elicited in the visual cortex only. With regard to type A, it was found that it frequently consisted of two potential waves; was independent of the state of adaptation of the eye; persisted even when the stimulating light was too weak to induce the on and off effects; but failed to occur when the shadow movement was not sufficiently fast. Its latent period was 30 milliseconds, the same as that of the off effect. It consisted of an off potential alone, when the interval of darkness produced by the variation of the size of the shadow was less than 20 milliseconds; or an off wave followed closely by an on wave, when the interval of darkness was above this limit. The interval between these two succeeding waves increased linearly with the interval of darkness. Thus it seemed that this type A of the shadow movement effect was an off effect or an off effect followed by an on effect. With regard to type B, it was found that it consisted of one monophasic wave only; was also independent of the state of adaptation of the eye; also appeared

even when the stimulating light was too feeble to elicit the on and off effects. It could be induced only when the shadow movement was above an angular velocity of 250° per second; above this threshold, the faster the speed of the shadow movement the shorter its latent period. It persisted even when the angular velocity was above 2000° per second. The physiological nature of this type B of shadow movement effect and its relation to the visual perception of motion are discussed.—*C.-F. Wu* (Nat. Res. Inst. Psychol., Acad. Sinica, Nanking).

5314. Woolsey, C. N., & Bard, P. Cortical control of placing and hopping reactions in *Macaca mulatta*. *Amer. J. Physiol.*, 1936, 116, 165.—"Following complete hemidecortication all these responses except the labyrinthine (which becomes greatly deficient) are totally and permanently abolished in the contralateral extremities, while ipsilateral reactions remain entirely normal. Unilateral removals of (a) all cortex anterior to the central fissure; (b) areas 4 and 6 together, or (c) the cortex corresponding to Brodmann's representation of area 4, cause enduring loss of all contralateral reactions except the visual and labyrinthine, which become only deficient. Less extensive extirpations of area 4 produce permanent deficiencies but not complete losses. When a unilateral precentral ablation has produced a complete deficiency in placing reactions of the opposite limbs, placing (cross-placing) of the sound extremities occurs on appropriate tactile stimulation of the affected members. This indicates that the deficit consists in motor rather than sensory loss. . . . Our results demonstrate the high degree of localization of the cortical control of these postural reactions in the monkey and yield evidence that the cortical representation of proprioceptive sensibility lies mainly ahead of the central fissure."—*T. W. Forbes* (N. Y. Psychiatric Institute).

5315. Wu, K. S. On the growth of the dendrites of the cerebral cortical cells of the albino mouse. *Chin. J. Zool.*, 1935, 1, 75-86.—A series of mice of various ages (at birth, 7th day, 25th day, and 1st year) were used for making observations on the changes of the dendrites of the cerebral cortical cells. It was found that at birth the cell body is comparatively oblong and spindle-shaped, and the dendrites are coarse and twisted. Near the distal end there are a few branches and nodular swellings. At the 7th day the cell body becomes more or less rounded and the dendrites are larger, but the appearance of the latter still remains in the immature condition as at birth. At the 25th day the cell body becomes more rounded and the dendritic hillock is constricted. The dendrites are increased in number and length but decreased in caliber, and their course becomes comparatively straight. The nodular swellings disappear and numerous small lateral buds appear. At the 1st year the dendrites do not show any difference in features from those of the 25th day, except that they become still longer and the lateral buddings become more clear and sharply defined. Thus it may be seen that the change of the dendrites is greatest in the

early days and that the post-natal increase of the thickness of the cerebral cortex is probably due to the enormous increase of the length of the dendrites and of the number of their branches but not to the increase of caliber of the dendrites.—*C.-F. Wu* (Nat. Res. Inst. Psychol., Acad. Sinica, Nanking).

[See also abstracts 5195, 5216, 5219, 5225, 5229, 5236, 5240, 5247, 5319, 5320, 5336, 5337, 5347, 5349, 5366, 5381, 5420.]

#### MOTOR PHENOMENA AND ACTION

5316. Albrecht, W., & Scheminzky, F. Künstliche Neurotisation bei Krötenmuskeln. (Artificial neurotization in toad muscle.) *Z. Biol.*, 1935, 96, 478-482.—(*Biol. Abstr.* X: 13199).

5317. Asratian, E. [Influence of extraneous and conditioned stimuli upon an unconditioned food reflex.] *C. R. Acad. Sci. URSS*, 1934, 2, 99-104.—English summary.—(*Biol. Abstr.* X: 10937).

5318. Asratian, E. [Influence of a conditioned motor defensive reflex on an unconditioned reaction of a dog to pain.] *C. R. Acad. Sci. URSS*, 1935, 1, 342-347.—(*Biol. Abstr.* X: 13200).

5319. Barcroft, J., Barron, D. H., & Windle, W. F. Some observations on genesis of somatic movements in sheep embryos. *J. Physiol.*, 1936, 87, 73-79.—Embryonic skeletal muscle contractions were elicited by faradic stimulation before the central nervous system functioned reflexly. Reflex-like movements first appeared in 23.5-25 millimeter embryos, and were localized responses to mechanical and electrical stimulation. The authors separate early active movements (involving more than one neurone) into three stages: (1) isolated movements of individual parts of the body, (2) two or three isolated movements associated into a group, (3) integration of group into general mass movements.—*M. A. Rubin* (Clark).

5320. Barron, D. H. Untersuchungen über die Chronaxie normaler und sympathikusloser Muskeln. (Investigations on the chronaxy of normal and desynergized muscle.) *Z. Biol.*, 1934, 95, 567-574.—(*Biol. Abstr.* X: 10938).

5321. Barth, E. Der Kraft- und Anstrengungswille auf Grund ergographischer Studien. (The will of strength and strain on the basis of ergographic studies.) *Industr. Psychotech.*, 1936, 13, 130-143.—Ergographic studies and the systematic evaluation of the resulting work curves are reported. Characteristic elements of these curves are the forms of progress of individual strokes, the duration of pressure, and maximum curves. The results of the studies and their relation to performance and preparation for performance, to personality, and to the attitude of the subject are thoroughly discussed.—*B. Casper* (Tennessee Valley Authority).

5322. Brandenburger, P. Plethysmographische Untersuchungen an Vasoneurotikern. (Plethysmographic studies on vaso-neurotics.) *Z. ges. exp. Med.*, 1936, 97, 798-904.—*R. R. Willoughby* (Brown).

5323. Brunton, C. E. The smooth muscle mechanism of exophthalmos in the cat and dog. *J. Physiol.*,

1936, 87, 60-61P.—It is shown histologically that the periorbita is composed of smooth muscle and elastic tissue. Only as long as the periorbita is intact will stimulation of its innervation produce exophthalmos.—*M. A. Rubin* (Clark).

5324. Cate, J. ten. Uni- und plurisegmentale Reflexe bei Tauben. (Uni- and plurisegmental reflexes in pigeons.) *Arch. néerl. Physiol.*, 1936, 21, 162-167.—From experiments performed on pigeons the author concludes that in these animals, as in others heretofore studied, a single spinal cord segment, isolated from other portions of the spinal cord, is capable of mediating reflex movements. No greater degree of automatism was found in the pigeon than in other animals.—*C. P. Stone* (Stanford).

5325. de Kleyn, A., & Versteegh, C. Über labyrinthäre Gleichgewichtsreaktionen bei Menschen und Tieren nach schnellem Kippen um die longitudinale Achse. (Labyrinth equilibrium reactions of men and animals to sudden tipping around the longitudinal axis.) *Acta oto-laryng., Stockh.*, 1936, 24, 34-52.—The subjects were placed longitudinally on a plane which could be suddenly tipped to either side. The normal reaction is for the subject to bend the arm on the side toward which he is tipped and to keep his head and body at right angles to the original position of the plane. After the labyrinth had been extirpated on both sides, the guinea pigs failed to make the adjustments and therefore tended to fall. A man with a pathological condition on both sides reacted similarly. After one-sided labyrinth extirpation in animals and one-sided loss of function in man, the reaction was temporarily lost on both sides, then recovered on the side destroyed, and finally regained on both sides to a fairly adequate degree. Several experiments were done which indicate that the tipping reaction is a function of the semi-circular canals.—*M. B. Mitchell* (N. Y. A., Concord, N. H.).

5326. Feng, T. P. The response of muscle to prolonged electric current. *Chin. J. Physiol.*, 1936, 10, 33-52.—The sartorii of toads and frogs were used as material in this study. The mechanical response of the muscle was recorded with isometric levers of the torsion spring type. A double thermopile specially made for the purpose is described and was used to determine the heat production of the two halves of a sartorius muscle separately, to reveal the non-uniformity, if any, of energy liberation along the muscle. The results showed that the response of the amphibian muscle to prolonged electric current was in the case of the toad sartorius strikingly similar to a tetanic contraction and was accompanied by large heat production distributed over the whole length of the muscle. A localized cathodal contracture also occurred to a varying extent as a component in the response of muscle to the continued passage of a constant current. The frog muscle rarely gave a response closely resembling a tetanus, as was usual with the toad muscle, when prolonged electric current was applied. Calcium minimized while sodium exaggerated the tetanic appearance of such response. Low temperature and fatigue acted analogously to

excess calcium. "The hypothesis has been proposed that the continuous passage of a constant current through the muscle produces immediately under the cathode a state of persistent excitation which can be propagated if conditions are favorable, and gives rise to a tetanus-like form of response; but which will be circumscribed and localized to the cathode region, if conditions are unfavorable, resulting in local cathode contracture. This hypothesis makes comprehensible the diverse types of responses of muscle given by the amphibian striated muscle to constant current under different conditions."—C.-F. Wu (Nat. Res. Inst. Psychol., Acad. Sinica, Nanking).

5327. Geremia, A., & Chiorazzo, G. *Contributo allo studio del riflesso oculo-vasomotore*. (Contribution to the study of the oculo-vasomotor reflex.) *Atti Soc. med.-chir. Padova*, 1933, 11, 224-236.—(Biol. Abstr. X: 10945).

5328. Goldberg, G. [I. P. Pavlov's physiological reflexology.] *Unser Shul*, 1936, 6, No. 5, 8-13.—A semi-popular account of Pavlov's reflexology.—D. Shakow (Worcester State Hospital).

5329. Harrison, J. S., & McSwiney, B. A. The chemical transmitter of motor impulses to the stomach. *J. Physiol.*, 1936, 87, 79-87.—M. A. Rubin (Clark).

5330. Heinze, E. *Endokrine Störungen*. (Endocrine disturbances.) *Fortschr. Neurol. Psychiat.*, 1936, 8, 285-298.—The first part of this article is devoted to a review of general work which has been published in the field. In two of these publications the role of inheritance in the diseases of the inner secretory system is reported. Sinton, one of the authors, is concerned with a general review of such disorders. Cernauteanu-Ornstein has also reported on work of a general nature, as have Leschke, Kuppers and others. The other sections of the article are devoted to the discussion of glands in relation to various diseases, such as schizophrenia, manic-depressive psychosis and epilepsy; to studies of the glands per se, in particular the thyroid, parathyroid and pituitary. A final section is devoted to the subject of castration, in which work by McCullagh and Renshaw, Lange, Wiethold and others is reported. Bibliography.—D. S. Oberlin (Delaware State Hospital).

5331. Hill, L. Narrowing of the air tubes of the lung produced by close warm conditions. *J. Physiol.*, 1936, 87, 17-18P.—M. A. Rubin (Clark).

5332. Hill, L. The effect on the lungs of breathing through a narrow orifice. *J. Physiol.*, 1936, 87, 45-46P.—To explain the experimental results, the author suggests that the obstruction of breathing through a narrow orifice impedes the pulmonary circulation. It is pointed out that the ability to breathe through orifices of varying diameter constitutes a simple test for determining fitness.—M. A. Rubin (Clark).

5333. Hovland, C. I. "Inhibition of reinforcement" and phenomena of experimental extinction. *Proc. nat. Acad. Sci., Wash.*, 1936, 22, 430-433.—Two types of extinction curves have been reported in the conditioned-reflex literature: one showing a

continuous decline in magnitude of response with successive unreinforced elicitations; the other showing a "larger response on the second or third extinction trial than on the first." Conditioning of the galvanic skin reaction to a tone in four groups of subjects lends support to an "inhibition of reinforcement" hypothesis in explanation of these two types. With a large number of reinforcements prior to extinction the initial rise of the extinction curve is observed; with few or distributed reinforcements, or with a lapse of time between reinforcements and extinction, no initial rise appears. A "negative adaptation" to continuous and protracted reinforcement is followed by a kind of temporary disinhibition when the unconditioned stimulus is omitted.—F. S. Keller (Colgate).

5334. Huizinga, E. On the tonic and the dynamic function of the cristae. *Acta oto-laryng., Stockh.*, 1936, 24, 82-95.—A sharp distinction does not exist between the course of the dynamic and static labyrinth reflexes, but, in general, the dynamic are attributed to the cristae and the static to the maculae. The functions vary in different animals. In pigeons the muscles of the neck and in frogs those of the legs are the most affected. After severance of the semicircular canals the acute symptoms are due to loss of the tonic function. This is restored, but the dynamic function is lost permanently. There is little rotatory reaction left. Ten pigeons, including some homing pigeons, with every canal cut could still fly normally. The dynamic function is, therefore, fully compensated.—M. B. Mitchell (N. Y. A., Concord, N. H.).

5335. Langdon-Brown, W. *The integration of the endocrine system*. Cambridge; New York: Univ. Press; Macmillan, 1935. Pp. 54. \$0.75.—The fifth Horsley Memorial Lecture. The author stresses "three recent lines of advance which are leading to a clearer conception of the integration of the endocrine system: (1) The diencephalon (particularly the hypothalamus) has been conclusively shown to be the nervous structure concerned with the expression of the emotions. (2) The pituitary . . . has become recognized as the leader of the endocrine orchestra. (3) It is now realized that all nervous impulses have a chemical mediator between the neuron and the tissue cell, and indeed between one neuron and another." These three points are developed with the intention of showing how they are leading to a new conception of the unity of body functioning.—D. Shakow (Worcester State Hospital).

5336. Magoun, H. W. The role of tonic reflexes in the postural reactions to cerebellar stimulation. *Amer. J. Physiol.*, 1936, 116, 106.—"Stimulation of the medial portion of the interior of the cerebellum in the cat yields a biphasic postural response. The typical rebound or second phase of this reaction, obtained at the cessation of a stimulus, is a prolonged contraction of the extensors of the ipsilateral limbs, the flexors of the contralateral limbs, and the contralateral axial muscles. . . . The role of tonic reflexes in the prolonged maintenance of these rebound

postures was studied by observing the duration of rebound contraction after the elimination of tonic reflexes. . . . It was found that the duration of the prolonged rebound contraction which follows the cessation of stimulation of the cerebellum in the normal animal, was considerably reduced by deafferentation of the reacting limb, and appeared to be decreased a little more by labyrinthectomy in addition to deafferentation. But after the elimination of all of the afferent impulses upon which the tonic effects of the stretch and labyrinthine reflexes depend, continued discharge of both flexor and extensor centers for the forelimb was observed for periods varying from a few seconds up to a minute or longer."—T. W. Forbes (N. Y. Psychiatric Institute).

5337. McNally, W. J., & Tait, J. Ablatory experiments exhibiting the relation between the utricular maculae and the vertical semicircular canals of the frog. *Amer. J. Physiol.*, 1936, 116, 100.—"When the only labyrinthine receptors left behind are the utricular maculae, a (blinded) frog still shows the usual compensatory gravity reactions on a slowly tilted substratum. From absence of its vertical canals it is subject, however, on any attempted movement to heavy bodily pendulation. Furthermore, the animal having only utricular maculae also responds to quick tilt, but the responses thus elicited are anti-compensatory, disturbing balance far more than if the maculae were absent. In (blinded) frogs deprived only of utricular maculae the compensatory adjustments to slow tilt are absent, but the vertical canal responses to quick tilt are very marked. When only one single vertical canal, anterior or posterior, is left behind, the precise effect of that canal may be accurately studied."—T. W. Forbes (N. Y. Psychiatric Institute).

5338. McNelly, W. C. Some effects of training on the respiratory response to exercise. *Amer. J. Physiol.*, 1936, 116, 100-101.—"The experiments fall into three groups: Group I, twenty-six experiments performed on four subjects as controls; Group II, twenty-seven tests on nineteen individuals in training and thirty-three tests on twenty-six individuals not in training and Group III, forty-two tests on three athletes extending over pre-training, training, and post-training periods. The results justify the following conclusions: (1) there is no significant difference in the muscular efficiency of the trained and untrained subjects; (2) the trained subjects had the lower R. Q. and the smaller rise in the quotient during exercise and recovery; (3) the oxygen debt incurred in doing a constant amount of work was greater for the untrained than for the trained subjects; (4) during exercise the quantity of oxygen absorbed per 100 cc. of air breathed was greater for the trained than the untrained subjects."—T. W. Forbes (N. Y. Psychiatric Institute).

5339. Molitor, H., & Knizuk, M. A bloodless method for continuous recording of peripheral circulatory changes. *Amer. J. Physiol.*, 1936, 116, 111.—"The method is based on the principle of simultaneous recording of skin temperature and light transmis-

sion through the skin. The amount of light transmitted varies with the amount of blood circulating through the observed area. By using a light source of constant intensity and measuring the amount of transmitted light by a photocell, the current output of this cell is in direct relationship to the blood supply. In order to differentiate between active hyperemia and congestion, the surface temperature as well as light transmission are simultaneously measured and recorded."—T. W. Forbes (N. Y. Psychiatric Institute).

5340. Neecheles, H., Levitsky, P., Kohn, R., & Maskin, M. The reaction of the dog's stomach to acetylcholine. *Amer. J. Physiol.*, 1936, 116, 112-113.—"From the above experiments it seems that acetylcholine in small doses produces vasoconstriction in the dog's stomach. This factor may play a role in the pathogenesis of peptic ulcer, since it is known that acetylcholine is released in the wall of the stomach, under vagus stimulation."—T. W. Forbes (N. Y. Psychiatric Institute).

5341. Orth, O. S., Neild, H. W., Schamp, H. M., Sullivan, J. E., & Burge, W. E. Evidence that the cause of fatigue is electrical. *Amer. J. Physiol.*, 1936, 116, 116-117.—"The decrease in the difference of potential between the nerve and muscle during the production of fatigue and finally a reversal in polarity is attributed to an accumulation of negative ions in the muscle, probably the negative lactic acid and phosphoric acid ions. As a matter of fact it was found that painting the muscle with a weak solution of either of these acids decreased the positive potential of the muscle and caused a reversal of polarity just as the stimulation did."—T. W. Forbes (N. Y. Psychiatric Institute).

5342. Rowntree, L. G., Clark, J. H., Steinberg, A., Einhorn, N. H., & Hanson, A. M. The role of the thymus and pineal glands in growth and development. *Amer. J. Physiol.*, 1936, 116, 132-133.—"As a result of these studies, it appears evident that the function of the thymus gland of the parent rat is concerned with the rate of growth and development of the offspring. The studies on the pineal gland have not progressed to date to the point which permits any statement concerning the function of this gland."—T. W. Forbes (N. Y. Psychiatric Institute).

5343. Russell, D. S. The distribution of unstriated muscle and its possible significance in exophthalmos. *J. Physiol.*, 1936, 87, 63-65P.—A histological description of the human orbit is given and the importance of the wide distribution of smooth muscle in the periorbita is briefly discussed in relation to the mechanism of exophthalmos.—M. A. Rubin (Clark).

5344. Steger, J. Herz und Seele. (Heart and mind.) *Arch. ges. Psychol.*, 1936, 96, 33-69.—Casual observation has long revealed an effect upon heart action of thought processes and emotional states. To test such effect the author used the Marbe-Russian method. He describes the apparatus and his procedure and gives statistical tables. Two subjects were used. The following effects were found: (1) mental work causes an acceleration of heart rate,

greater on the diastolic beat; (2) recuperation of both diastolic and systolic beats takes place rapidly after cessation of work, an actual retardation taking place in rest; (3) fright causes a sudden acceleration, more marked on the diastolic beat; (4) in contrast, physical work results in more rapid diastolic and systolic beat, with a more rhythmic acceleration; (5) after physical exertion the diastolic recuperation is rapid and irregular, the systolic slow and regular. Some studies were also made with psychopathic persons, with similar results.—A. B. Herrig (Michigan Central State Teachers College).

5345. Strughold, H., & Hangen, F. Beiträge zur Kenntniss der Eigenreflexe der quergestreiften Muskeln beim gesunden Menschen. (Contributions to knowledge of the tendon reflexes of striated muscle in healthy persons.) *Z. Biol.*, 1934, 95, 588-598.—(*Biol. Abstr.* X: 10958).

5346. Vogel, P. Zum Problem des Schwindels. (The problem of vertigo.) *Forsch. Fortschr. dtsh. Wiss.*, 1935, 11, 162.—P. Klimpel (Leipzig).

5347. Weiss, P. The function of interchanged fore limbs in salamanders. *Amer. J. Physiol.*, 1936, 116, 158-159.—"Previous experiments by the author have suggested that a nerve becomes specified by its muscle in the sense that it can respond selectively to specific central impulses destined for that muscle. A nerve connected with a strange muscle undergoes a corresponding re-specification. . . . A central discharge pattern would, then, consist of a regular sequence of specific activities each one engaging its corresponding set of specified neurones. Consequently, if a normal left limb is removed and a right limb transplanted in its place, the latter being anatomically a mirror image of the former, and if the central discharge pattern continued to produce the original sequence devised for the normal left limb, then the movements exhibited by the transplanted limb in the various phases of locomotion should be expected to be the exact mirror images of the ones that the normal limb would perform at the same instant. This was actually found to be the case in salamanders (11 successful cases) in which the developed fore limbs had been interchanged."—T. W. Forbes (N. Y. Psychiatric Institute).

5348. Wickwire, G. C., & Burge, W. E. The threshold stimulus of the knee jerk as an index to physical fitness. *Amer. J. Physiol.*, 1936, 116, 161.—"If the day's work, either physical or mental, was very strenuous it required a much greater increase in the weight of the hammer to elicit a kick than when the day's work was light. It was also found that when the physically fit performed the same task as the physically unfit a much less increase in the weight of the hammer was required to produce a knee kick in the physically fit than in the unfit. After the performance of the work, only a short time was required before the original light weighted hammer would evoke a knee jerk in the physically fit, whereas a much longer time was required in the physically unfit. Hence it would seem that the threshold stimulus for the knee jerk may be used as a test for

physical fitness."—T. W. Forbes (N. Y. Psychiatric Institute).

5349. Windle, W. F. The genesis of somatic behavior in mammalian embryos. *J. Physiol.*, 1936, 87, 31-33P.—On the basis of his experimental results, the author suggests that mammalian somatic behavior has its origin in simple, non-integrated, spinal type reflexes.—M. A. Rubin (Clark).

5350. Wojatschek, W. Klinische Messung der Otolithenfunktion. (Clinical measurement of the function of the otoliths.) *Acta oto-laryng.*, Stockh., 1936, 24, 11-33.—Apparatus is pictured and described for rotating and swinging the patient. The subjective as well as objective responses were studied. Bibliography.—M. B. Mitchell (N. Y. A., Concord, N. H.).

[See also abstracts 5196, 5203, 5207, 5268, 5276, 5278, 5284, 5291, 5304, 5312, 5314, 5352, 5353, 5355, 5356, 5359, 5366, 5367, 5371, 5381, 5409, 5419, 5441, 5442, 5504, 5554, 5571, 5586, 5587.]

## PLANT AND ANIMAL BEHAVIOR

5351. Anderson, E. E. Consistency of tests of copulatory frequency in the male albino rat. *J. comp. Psychol.*, 1936, 21, 447-459.—The purpose of this study was to determine the reliability and consistency of the copulation test under various conditions. Under standardized conditions the reliability coefficients for copulation scores ranged from  $.69 \pm .05$  to  $.76 \pm .04$ . For ejaculation scores the coefficients ranged from  $.60 \pm .06$  to  $.69 \pm .03$ . The tests were for 15-minute periods, four being given each rat. Estimated coefficients (Spearman-Brown) for one-hour tests are .92 for copulation and .84 for ejaculation. Combined scores yield only slightly higher reliability than separate ones. The correlation between copulation and ejaculation scores was found to be  $.74 \pm .04$ . 55 rats 150 days old were used in the tests. Data on frequency of copulations and ejaculations are reported.—N. L. Munn (Peabody).

5352. Battelli, F., Zimmet, D., & Gazel, P. Le réflexe épicephalique chez les amphibiens. (The epicephalic reflex in amphibians.) *C. r. Soc. Phys. Hist. nat. Genève*, 1933, 50, 245-246.—(*Biol. Abstr.* X: 13183).

5353. Bell, G. H., & Robson, J. M. Activity of the guinea-pig uterus under the influence of ovarian and gonadotropic hormones. *J. Physiol.*, 1936, 87, 3P.—M. A. Rubin (Clark).

5354. Blum, H., Hyman, E., & Burdon, P. Studies of oriented movements of animals in light fields. *Univ. Calif. Publ. Physiol.*, 1936, 8, 107-118.—Kühn (1919) has separated the oriented movements of animals into a number of types on the basis of the pathways followed in certain spatial arrangements of the stimulating field, and has assigned separate orienting mechanisms to the several types. The present paper points out that more than one of the types of movement described in Kühn's classification may be produced in the same animal, and hence this classification is of little value. Behavior of animals

in light fields, which would be explained by Kühn in terms of his separate categories, is accounted for by a single common mechanism.—*J. Brockwell* (Brown).

5355. Bull, H. O. Studies on conditioned responses in fishes. 3. Wave length discrimination in *Blennius pholis* L. *J. Marine Biol. Ass. United Kingdom*, 1935, 20, 347-364.—Conditioned motor responses are readily formed in the teleost *B. pholis* by combining the giving of a visual stimulus with an electric shock. Evidence of discrimination for various wave lengths of light may be deduced from the resultant behavior observed in differential conditioning, in which one color acts as a positive conditioning stimulus reinforced by electric shock, and the colors discriminated are similarly presented but without succeeding shock. In the course of lengthy experiments (only summarized in the paper) on 10 fishes discrimination was established between the Kodak color filters 27 (red), 32 (magenta), 38A (blue), 58 (green), 70 (red), 71 (orange red), 72 (orange yellow), 73 (yellow green), 74 (pure green), and gray (96). The intensity factor was controlled. Photopic and scotopic conditions gave similar results. Only very wide differences in intensity of gray could be discriminated. This fish therefore appears to possess a well defined color vision as we ordinarily speak of it.—*H. O. Bull*.

5356. Bull, H. O. Studies on conditioned responses in fishes. 5. On the controlling influence of normal behaviour traits upon capacity to form experimental conditioned motor responses under certain conditions. *J. Marine Biol. Ass. United Kingdom*, 1935, 20, 365-370.—In a series of experiments of the type previously described it was found that Pleuronectid fishes are incapable of forming conditioned motor responses under those conditions for at least 200 associations, while a number of other common teleosts readily do so in less than 40. This is correlated with the behavior of these fishes to harmful stimuli in a natural state.—*H. O. Bull*.

5357. Chang, H. T. An auditory reflex of the hedgehog. *Chin. J. Physiol.*, 1936, 10, 119-124.—An experimental analysis of the mechanism of auditory reaction in the hedgehog was made. It was found that a high pitch tone of a frequency from 7591 to 84,000 c.p.s. (produced by means of a Galton whistle) was effective in inducing a quick short ventrad jerk of its head, and that a low pitch tone (e.g., 768 c.p.s.) was entirely ineffective, no matter how loud it was. Within the range tested, the optimal stimulus seemed to be a tone of 20,000 c.p.s. This head jerk might also be induced by electrically stimulating the 8th cranial nerve, the acoustic tubercle, and the inferior colliculus, but not by stimulating the superior quadrigeminal body and the cerebral cortex. It persisted even after extirpation of the cerebral cortex and the thalamus, but disappeared after removal of the midbrain. Thus the center for this reflex lay in the posterior quadrigeminal body. It was also found that successive sectioning of the different muscles in the neck only weakened the reac-

tion slightly; it disappeared only after sectioning of the rostral portion of the panniculus carnosus on both sides.—*C.-F. Wu* (Nat. Res. Inst. Psychol., Acad. Sinica, Nanking).

5358. Charpentier, G. Das Elektoretinogramm normaler und hemeraloper Ratten. (The electroretinogram of normal and hemeralopic rats.) *Acta Ophthalm., Kbh.*, 1936, 9, Suppl., 1-85.—Electroretinograms were obtained from the normal eyes of 11 albino rats by means of direct coupled amplifiers and a string galvanometer. The size of the b-wave and the fusion frequency were measured as functions of the strength of the stimulating light upon dark-adapted eyes. Changes in fusion frequencies with partial light adaptation to the brightest stimulating light as well as to complete light adaptation in sunlight were also observed. The b-wave begins to increase at an intensity of about 0.001 candles/cm<sup>2</sup> and continues up to an intensity of 1 candle/cm<sup>2</sup>. Fusion frequency increases only slightly during the four lowest intensities (0.001-0.1 candle/cm<sup>2</sup>) but a sudden marked increase occurs at the highest intensity (1 candle/cm<sup>2</sup>). In partial light adaptation (10-15 min.) with maximal stimulation of 1 candle/cm<sup>2</sup>, the fusion frequency drops about 20%. A subsequent experiment was then carried out with rats fed on a vitamin-A free diet for 25-50 days and suffering from hemeralopia (night-blindness). As stimulus a Tutton monochromator with a maximum wave length of 5200 Å was used. The strength of the light was constant. The b-wave was recorded at various stages of adaptation. With complete dark adaptation no retinal potential was obtained. The b-wave, the size of which is a measure of amount of visual purple present during various stages of adaptation, is comparatively small.—*G. F. J. Lehner* (Brown).

5359. Diakonoff, A. Contributions to the knowledge of the fly-reflexes and the static sense in *Periplaneta americana* L. *Arch. néerl. Physiol.*, 1936, 21, 104-129.—This is a detailed experimental study of fly- and run-loosing stimuli, sense organs that receive these stimuli, and central reflex mechanisms that control the fly- and the run-reflexes in cockroaches.—*C. P. Stone* (Stanford).

5360. Duse, A. Genesi della migrazione degli uccelli e sue cause attuali. (Genesis of the migration of birds, and its present causes.) *Rass. faunist.*, 1935, 1, 37-45.—*G. M. Hirsch* (Rome).

5361. Erhardt, A. Ein Beitrag zu den Helligkeitsreaktionen von *Planaria lugubris* O. Schm. (A contribution to the brightness reactions of *Planaria lugubris* O. Schm.) *Biol. Zbl.*, 1932, 52, 321-329.—(*Biol. Abstr.* X: 10907).

5362. Farkas, B. Das Gehör der Fische und die Cristae acusticae. (The hearing of fish and the cristae acusticae.) *Acta oto-laryng., Stockh.*, 1936, 24, 53-82.—The fish *Lebistes reticulatus* Peters has a well-developed sense of hearing, but no Weberian apparatus. The otolith in the sacculus is too thick and inflexible to conduct sound. Some of the small ossicles of the rudimentary fifth gill-arch and the hyomandibular system connect directly with the

horizontal canal. The acoustic cristae are homologous to the papilla acustica basilaris of birds and thus are related to the organs of Corti in higher animals. Morphological changes were noted, especially in the lateral ampulla, after protracted sounds from an electric horn.—*M. B. Mitchell* (N. Y. A., Concord, N. H.).

5363. Fischel, W. Möglichkeiten tierischen Denkens. (Possibilities of animal thought.) *Zool. Anz.*, 1934, 105, 225-233.—(*Biol. Abstr.* X: 13189).

5364. Gérard, P., & Rochon-Duvigneaud, A. L'oeil et la vision des Mégachéiroptères. (Eye and vision of the Megachiroptera.) *Arch. Biol.*, 1930, 40, 151-173.—(*Biol. Abstr.* X: 10929).

5365. Giltay, M. La notion du nombre chez les oiseaux. (The idea of number in birds.) *Bull. Soc. Roy. Sci. Liège*, 1933, 6/7, 144-146.—(*Biol. Abstr.* X: 10909).

5366. Girden, E., Mettler, F. A., Finch, G., & Culler, E. Conditioned responses in a decorticate dog to acoustic, thermal, and tactile stimulation. *J. comp. Psychol.*, 1936, 21, 367-385.—A decorticate dog acquired conditioned responses to acoustic, thermal and tactile stimuli under conditions similar to those of the previous studies by these investigators. As in the case of the decorticate dog of Culler and Mettler, this animal gave a diffuse rather than a precise and adaptive response. The animal developed a differential response to auditory stimuli, responding to a bell but gradually losing its response to a tone of 1000 cycles. The conditioned response to a loud tone was extinguished and re-established. With complete decortication there was a hearing loss of approximately 70 to 75 decibels. Bibliography.—*N. L. Munn* (Pittsburgh).

5367. Kleinholz, L. H. Studies in reptilian color changes. *Proc. nat. Acad. Sci., Wash.*, 1936, 22, 454-456.—The effects of autotransplantation, hemio-transplantation, faradic and mechanical stimulation, as well as denervation and adrenalin hydrochloride injections, upon normal and hypophysectomized specimens of *Anolis carolinensis* (the Florida chameleon), lead the author to conclude that "the generalized darkening of *Anolis* in the light and on illuminated black backgrounds is due, not to a transmission of nervous impulses directed toward innervated melanophores . . . but to an endocrine secretion from the pituitary gland. In addition, it appears that darkening of certain localized regions may be attributable to the secretion of adrenalin or an adrenalin-like substance."—*F. S. Keller* (Colgate).

5368. Kokubo, S. On the behavior of catfish in response to galvanic stimuli. *Sci. Repts. Tohoku Univ. 4th Ser. Biol.*, 1934, 9, No. 2/3, 87-96.—(*Biol. Abstr.* X: 13193).

5369. Koller, G. Über den Farbwechsel von Coregonenlarven. (Color change in Coregonid larvae.) *Biol. Zbl.*, 1934, 54, 419-436.—(*Biol. Abstr.* X: 13194).

5370. Krechevsky, I. Brain mechanisms and brightness discrimination learning. *J. comp. Psychol.*,

1936, 21, 405-445.—In his experiments on black-white discrimination in normal rats and rats suffering from occipital lesion, Lashley found that operated animals learn faster than normal ones. All of Lashley's animals were trained to respond positively to white. Krechevsky demonstrates in this study that Lashley's results are to be attributed to the fact that normal rats have a strong preference for black, operated ones for white. In learning a dark-going habit, operated animals are much poorer than normal animals. This difference is smaller when shock is administered for errors. Operated animals are inferior in experiments requiring reversal of preferred responses. The differences are more evident in trials than in errors. Differences are apparent in retention as well as in original learning. Lesions involving as much as 10% of the cortex are sufficient to produce differences between normal and operated rats. The author posits a deficiency in "attention" which may account for the loss in "general" capacity of operated animals. His results indicate, he believes, that "In devising techniques for comparing operated and normal animals in learning ability, attention should be paid to the possible qualitative differences in the two situations. One and the same 'objective' learning problem does not necessarily present the same problem-situation to the two animals." 110 rats were used in this study. Bibliography.—*N. L. Munn* (Peabody).

5371. McNally, W. J., & Tait, J. Action of the utricular maculae of the frog (moving picture demonstration). *Acta oto-laryng., Stockh.*, 1936, 24, 52.—Motion pictures have been taken of frogs whose optic nerves and all labyrinthine nerves except the two utricular maculae have been severed. They show "(1) marked bodily pendulation on any attempted movement; (2) retention of the proper gravity adjustments on the slowly inclined tilt-table; (3) retention of the body-righting reaction; (4) easily elicited chin-drop response, frequently followed by 'irrelate reaction.'"—*M. B. Mitchell* (N. Y. A., Concord, N. H.).

5372. Minnich, D. E. The responses of caterpillars to sounds. *J. exp. Zool.*, 1936, 72, 439-453.—Using forks of 256, 512, 1024 v/s with resonance boxes 4 cm. from the organism, the author studied the responses of seven species of butterfly larvae and eight species of moth larvae to sound. Results show that all are responsive; that is, show "freezing" or contraction of longitudinal muscles to such stimuli. Relatively hairless forms were responsive. A diffuse distribution of receptors, which may be structures other than hairs, is suggested.—*L. Carmichael* (Rochester).

5373. Moraldi, M. Studi sul letargo. II. La soglia di eccitazione della corteccia cerebrale di *Bufo vulgaris* durante il letargo, il risveglio, la veglia. (Studies on hibernation. II. The threshold of excitation of the cerebral cortex in *Bufo vulgaris* during hibernation, awakening and full activity.) *Riv. Biol.*, 1934, 17, 547-551.—(*Biol. Abstr.* X: 10951).

5374. Rauh, A. E., & King, H. D. Investigations on waltzing and shaking rodents of particular genetic

types. *Amer. J. Physiol.*, 1936, 116, 126.—"Waltzing mice, guinea pigs and rats of particular genetic types, and shaker (Zavadskaia) mice have been used. All these animals were more active than normals. In addition they showed characteristic, spasmodic attacks, increased by excitement. The waltzing animals whirled rapidly or ran in small circles. Most of the animals whirled or circled both clockwise and counter-clockwise, while in some cases the direction was fixed. The shakers threw their heads back, jumped, turned a back-flip in the air and landed on their feet. Between attacks no asymmetry in posture was noted. All animals landed on their feet when dropped. However, all failed to show normal nystagmus when rotated with constant acceleration. The rats, in contradistinction to the mice, showed rotation and vertical deviation of the eyes in response to appropriate positions of the head in space. . . . In the brains of three mice examined, large capillary sinuses have been found, particularly throughout the vestibular nuclei. No other gross abnormalities were found in these brains."—T. W. Forbes (N. Y. Psychiatric Institute).

5375. Sears, M. Responses of deep-seated melanophores in fishes and amphibians. *Biol. Bull.*, 1935, 68, 7-24.—(*Biol. Abstr.* X: 10915).

5376. Sgonina, K. Der Spallanzanische Fledermausversuch. (The Spallanzani bat experiment.) *Zool. Anz.*, 1935, 109, 325-327.—In this check on Spallanzani's experiment on avoidance of obstacles by blinded bats, it is not stated whether the bats used (7 spp.) were blinded or not. Vertical strings, .3-1.7 mm. thick, were stretched across dimly lighted rooms at intervals of 30-40 cm. Strings of .3 mm. diameter were detected by no sp.; those of .8 mm. were detected by *Myotis nattereri* but not by *M. myotis*; those of .9-1.7 mm. were detected by *Plecotus auritus*. Thus bats detect and avoid strings of at least 1 mm., but scarcely those of less diameter.—(*Biol. Abstr.* X: 10916).

5377. Sivickis, P. B. The effect of the regeneration activity upon the rate of regeneration of eyes in *Planaria lugubris*. *Mém. Fac. Sci. Vylautas le Grand (Kaunas)*, 1934, 9, 11-42.—(*Biol. Abstr.* X: 13196).

5378. Spragg, S. D. S. Anticipatory responses in serial learning by chimpanzee. *Comp. Psychol. Monogr.*, 1936, 13. Pp. 72.—Five chimpanzees were required to traverse, with a stylus, spatial and temporal mazes in which the series of turns was such that anticipatory responses might be elicited. In one linear maze the order of turns was RRRRRRRL. In another the animal was required to select the fourth of seven pathways leading off from the right of a forward-going alley. The temporal maze called for the response RRRL. In each situation there was a tendency to anticipate the final correct turn. In several instances there was exhibited a gradient of anticipatory errors with its high end near the final correct turn. The second maze problem was solved by blindfolded animals. Bibliography.—N. L. Munn (Peabody).

5379. Stumper, R. L'homme et la fourmi. (Man and the ant.) *Scientia, Bologna*, 1936, 60, 95-108.—The insect societies which have been studied, especially those of the ant lend themselves to a number of opposed interpretations. This situation must lead the positivist to reject abstractions and to cling to the sheer facts of each particular society, since every comparison between insect and human societies contains much that is arbitrary. Even such a notion as the "totalitarian concept" does violence to the facts in its effort to conform to preconceived constructs.—D. W. Chapman (Recorder's Court Clinic, Detroit).

5380. Sumner, F. B., & Fox, D. L. Studies of carotenoid pigments in fishes. II. Investigations of the effects of colored backgrounds and of ingested carotenoids on the xanthophyll content of *Girella nigricans*. *J. exp. Zool.*, 1935, 71, 101-123.—(*Biol. Abstr.* X: 10918).

5381. Wyman, L. C., & Tum Suden, C. The distribution of adrenergic vasodilators in the rat. *Amer. J. Physiol.*, 1936, 116, 165-166.—"These findings are consistent with the conclusions that in the rat, as in the cat, adrenergic vasoconstrictors are more abundantly distributed to the splanchnic area as compared to the peripheral area; but that the rat, unlike the cat, has a significant distribution of adrenergic vasodilators to both regions, perhaps an almost equal distribution. Such interspecific differences in vascular physiology are of significance when general conclusions concerning the physiology of mammals are to be drawn."—T. W. Forbes (N. Y. Psychiatric Institute).

[See also abstracts 5207, 5215, 5219, 5221, 5235, 5240, 5259, 5272, 5275, 5277, 5280, 5283, 5284, 5286, 5294, 5295, 5297, 5300, 5301, 5305, 5311, 5314, 5315, 5316, 5319, 5323, 5324, 5337, 5420, 5442.]

## EVOLUTION AND HEREDITY

5382. Behr-Pinnow, C. v. Die Vererbung bei den Dichtern. (Heredity among poets.) *Arch. Klaus-Stift VererbForsch.*, 1935, 10, 237-312.—This study, based on Kretschmer's theory of types, shows that poetic endowment is an Anlage complex in which at least one Anlage pair of opposites can be distinguished: endowment for romanticism (schizothymic) and for realism (cyclothymic). One or the other may be dominant or they may exist side by side. This pair of genes cannot be traced back to other genes.—P. Krieger (Leipzig).

5383. Bracken, H. v. Verbundenheit und Ordnung im Binnenleben von Zwillingspaaren. (Rapport and regulation in the common life of twins.) *Z. pädag. Psychol.*, 1936, 37, 65-81.—The author gives a discussion of the social psychology of twins based on the literature and his own previously reported experiments. Under rapport he considers the differences in this and other respects between identical and dissimilar twins, reaction to separation, and rapport as sympathetic insight. Its nature is obscure. There are certainly means of understanding between twins aside from speech, but they probably do not belong

to parapsychological phenomena. Regulation includes leadership within the pair, and extraversion or introversion of each member in relation to other people. The social functions most important for the eugenic study of twins are extraversion-introversion, the stimulating and decisive influence within the pair, and their striving for equality or predominance. The problems involved in their social psychology become increasingly difficult as the marriageable age is approached. Different vocations promote self-reliance. The desirability of separating identical twins against their will in home and school is doubtful, considering the deep roots of rapport.—*M. E. Morse* (Baltimore).

5384. Canavan, M. M., & Clark, R. The mental health of children of dementia praecox stock. *Ment. Hyg., N. Y.*, 1936, 20, 463-471.—In 1922 the writers gathered data on the children of dementia praecox patients, and the present study was undertaken at that time. Of a total of 463 offspring, 117 children from 44 of the original matings were found. 9 of these were dead. Up to the time of this study 58 of the 108 living children, 34 females and 24 males, aged 2 to 40 years, had been normal. 50 were deviants, 33 males and 17 females aged 12 to 40 years. Of these 47 had insane mothers and 3 insane fathers. Of the deviants, 3 had been committed to mental hospitals; 2 were diagnosed as dementia praecox, the third as manic-depressive. 14 of the 50 were mental defectives or backward. 3 of the 50 deviants were "nervous" and one had an attack of "nervous exhaustion." 3 were physically diseased to a marked degree. 27 were problems of conduct disorder. Up to the time of this study only 2% of the 377 children of the original study have become committedly insane. A table is given comparing the children of epileptic parents with those whose parents had dementia praecox and a group of children who had non-psychotic parents.—*H. S. Clapp* (Grasslands Hospital, Valhalla, N. Y.).

5385. Fisher, R. A. Heterogeneity of linkage data for Friedreich's ataxia and the spontaneous antigens. *Ann. Eugen., Camb.*, 1936, 7, 17-21.—This paper reports a re-examination, by means of a more efficient scoring system, of the data presented by Hogben and Pollack concerning Friedreich's ataxia. Methods are given for testing the homogeneity of such data, and the sample is shown to be significantly heterogeneous. A test of linkage is given appropriate to heterogeneous data; it depends on an analysis of variance of the *u* scores obtained from different families.—*J. W. Dunlap* (Fordham).

5386. Gabriel, E. Der Einfluss der elterlichen Trunksucht auf die Nachkommen. (The influence of parental alcoholism on the offspring.) *Forsch. Fortsch. dtsch. Wiss.*, 1935, 11, 177.—According to the investigations, the conclusion is justified that parental alcoholism affects the children unfavorably. Nevertheless, alcoholism is not actually causal, but merely stimulates the development of physical or mental deviations in the children.—*U. Dähnert* (Dresden).

5387. Haldane, J. B. S. A search for incomplete sex-linkage in man. *Ann. Eugen., Camb.*, 1936, 7, 28-57.—This is a report of a preliminary search among human pedigrees for incomplete sex-linkage, in which methods for the detection of such sex-linkage are described together with the results. The genes responsible for the following conditions appear to fall in this category and are given in the order of the weight which Haldane places on the evidence: xeroderma pigmentosum, recessive; achromatopsia (complete color-blindness), recessive; retinitis pigmentosa, recessive form not associated with deafness and not completely sex-linked; retinitis pigmentosa, dominant form, in some pedigrees only; Oguchi's disease, recessive; and epidermolysis bullosa dystrophica, recessive form.—*J. W. Dunlap* (Fordham).

5388. Hanhart, E. Über die Vererbung von Anlagen zu Idiosyncrasien. (The inheritance of Anlagen for idiosyncrasies.) *Forsch. Fortsch. dtsch. Wiss.*, 1935, 11, 217.—Based on studies in physicians' families and patrician lines.—*U. Dähnert* (Dresden).

5389. Hartmann, H. Zur Charakterologie erbgleicher Zwillinge. (Characterology of identical twins.) *Jb. Psychiat. Neurol.*, 1935, 52, 57-117.—Great differences in the characters and temperaments of identical twins appear to be distinctly related to neuroses and to originate from them.—*P. Krieger* (Leipzig).

5390. Hartnacke, W. Das Zahlenverhältnis der Begabten und der Unbegabten in Volksganzen. (The relative proportions of the well and the poorly endowed in the general population.) *Forsch. Fortsch. dtsch. Wiss.*, 1935, 33, 421-422.—In the 87 large German cities studied, only 15% of the people were above the average, 40% were of moderate endowment, and 45% were more or less unsuccessful. "The proportion of the best endowed is decreasing and that of the mediocre and mentally defective is increasing."—*S. Drobnes* (Freiburg).

5391. Jones, D. C. Eugenic aspects of the Merseyside Survey. *Eugen. Rev.*, 1936, 28, 103-113.—The differential fertility and future trends of the population of England are discussed, based on findings of the Merseyside Survey (Liverpool, three other country boroughs, and a few neighboring urban districts). Some 7000 working-class families were interviewed as to familial composition, age, sex, occupation, earnings, housing accommodation, birth-place, and size of families. Occupational skill was divided into non-manual, skilled artisans, and unskilled workers. Fertility was measured against income, regularity of employment, and dependence on public aid. A relatively high fertility was found for families whose fathers were subnormal in occupational skill and employability, and for families below the poverty line and those on relief. Figures show a correlation between number of children subnormal in physique and intelligence, and unskilledness of parents. Furthermore, for the children of the unskilled, both hereditary and environmental handicaps operated against sound development after birth. Data suggest a connection between various groups of

subnormality and borderline conditions: mental defect, physical defect, intemperance, destitution, etc. Social assistance is urged to offset the environmental drag at least, and it is maintained that there is little justification for disregarding the hereditary aspect.—*G. C. Schwesinger* (American Museum of Natural History).

5392. Kaven, A. *Statistische und experimentelle Beiträge zur Frage der Beeinflussung des Zahlenverhältnisses der Geschlechter*. (Statistical and experimental contributions to the problem of influencing the relative numbers of the sexes.) *Z. menschl. Vererb.- u. Konst. Lehre*, 1935, 19, H.2.—Kaven finds that none of the many series of statistics prove that in mammals external influences can change the relative numbers of the sexes.—*P. Krieger* (Leipzig).

5393. Lewis, A. *A case of apparent dissimilarity of monozygotic twins*. *Ann. Eugen., Camb.*, 1936, 7, 58-64.—A pair of monozygotic twins are reported in which great disparity as to skeleton and general appearance is shown, due to acromegaloïd changes in one of them. The relation of this to diagnosis of monozygosity is emphasized, and the role of the pituitary in mediating growth and the relationships between hereditary and environmental factors in bringing about such anomalies are briefly discussed.—*J. W. Dunlap* (Fordham).

5394. Müller, K. V. *Zur Rassen- und Gesellschaftsbiologie des Industriearbeiters*. (The racial and social biology of the industrial worker.) *Arch. Rass.- u. GesBiol.*, 1935, 29, 187-234.—The rise of workers' children and working adolescents is studied by means of statistical and psychotechnical researches on children from lower and higher environments. In all countries permeated by German culture the "upper layer" of industrial workers forms a reservoir of socially and biologically desirable hereditary strains, derived in unbroken line from their medieval origins in the peasant's farm and the master's workshop, without proletarian contamination. Fortunately, this upper layer is not ambitious for a new social environment and does not intermarry with other classes; hence its rise is protected from a falling birth rate.—*P. Krieger* (Leipzig).

5395. Penrose, L. S. *Autosomal mutation and modification in man with special reference to mental defect*. *Ann. Eugen., Camb.*, 1936, 7, 1-16.—This paper discusses the conditions of equilibrium in a population containing an autosomal dominant sublethal gene whose expression is not uniform throughout the population, and in addition examines the possible significance of these conditions in connection with certain problems of mental defect. Special attention was devoted to epiloia, a disease causing mental deficiency, which is subject to modification. The mutation rate of this gene was estimated. There is a higher proportion of idiots among the sporadic than among the hereditary cases of epiloia, and it was shown that the uneven distribution of the modifying genes would explain this peculiarity.—*J. W. Dunlap* (Fordham).

5396. Popescu-Sibiu, I. *Geneza socială a eredității psihologice*. (Social genesis and psychological heredity.) *Bul. Spital. Bol. mint. nerv. Sibiu*, 1936, 57-60.—*R. R. Willoughby* (Brown).

5397. Price, B. *Homogamy and the intercorrelation of capacity traits*. *Ann. Eugen., Camb.*, 1936, 7, 22-27.—In this paper it is noted that intercorrelation of otherwise uncorrelated traits arises as a result of cross marital correlation. It is assumed that human homogamy is more marked in respect to a summation of generally desired traits than in respect to such traits considered singly, and it is noted that cross marital correlation is a consequence of such mating. The observed positive correlations among desirable traits are thus explained as due in a major degree to cross homogamy. Probable effects of bionomic and social conditions on intercorrelations are also noted.—*J. W. Dunlap* (Fordham).

5398. Reinöhl, F. *Die Vererbung der Intelligenz*. (Inheritance of intelligence.) *Arch. Rass.- u. GesBiol.*, 1935, 29, 26-42.—Paternal and maternal hereditary influence on the children is, on the whole, of equal weight. Evidence for maternal predominance is lacking.—*P. Krieger* (Leipzig).

5399. Rittershaus, E. *Die Vererbung musikalischer Eigenschaften*. (The inheritance of musical qualities.) *Arch. Rass.- u. GesBiol.*, 1935, 29, 132-152.—On the basis of comparative studies the author maintains that most creative men in musical history had Nordic features and blue eyes; e.g. Bach, Händel, Mozart, Beethoven, Wagner, Brahms. The east-Alpine race is superior only in the spheres of "melody" and "sentiment."—*P. Krieger* (Leipzig).

5400. Schultze-Naumburg, A. *Statistische Untersuchungen an den Hilfsschülern Pommerns*. (Statistical studies on dependent school children in Pomerania.) *Arch. Rass.- u. GesBiol.*, 1935, 29, 153-185.—Statistics from the Pomeranian schools for neglected children show that the fertility of these children's families is by no means diminishing in comparison with previous generations. There is thus no self-cure. In the new German state these schools are important as catch-basins to separate early the children who come under the law for prevention of diseased offspring.—*P. Krieger* (Leipzig).

5401. Scott, J. P. *A challenge to the eugenist*. *J. Hered.*, 1936, 27, 261-264.—The writer criticizes the tenets of a eugenic program, as interpreted by himself. "Social fitness" is a variable within time and space, not necessarily correlated with economic status, ability to achieve power, or even with the advancement of civilization, which is dependent upon material prosperity. Negative eugenics is confronted by the barriers inherent in heterozygosity and recessiveness. Positive eugenics, i.e., selection for general adaptive value, will come to a dead end with complete homozygosity. The more promising line for race improvement is to cross-breed, and then to select particular characters for inbreeding, which would result in the creation of an hereditary caste system. Our most desirable human types have not

sprung from "pure lines." The best way to iron out differential birth rates is to level economic conditions. Six problems for research are proposed: (1) Is social fitness correlated with economic condition? (2) Has deterioration in social fitness followed the differential birth rate? (3) If so, has this affected civilization adversely? (4) Which is more important in evolution, inbreeding or natural selection? (5) Are injurious human traits of dominant, recessive, or multiple-factor origin? (6) Can a breeding program raise general social fitness? The article is followed by editorial comments.—G. C. Schwesinger (American Museum of Natural History).

5402. Trendelenburg, W., & Schmidt, I. *Untersuchungen über die Vererbung von Farbenfehlsichtigkeiten.* (Studies on the inheritance of defects in color vision.) *Forsch. Fortschr. dtsh. Wiss.*, 1935, 11, 161.—Within the same family, the different forms of defective color vision are never interchangeable. "Indecision" is also to be considered as a constitutional defect; i.e., the eye distinguishes well in a neutral setting, but tires easily and can no longer recognize differences.—P. Klimpel (Leipzig).

5403. Yun-Kuei, T. *Chinesen-Europäerinnen-Kreuzung.* (Chinese crossing with European women.) *Z. Morph. Anthr.*, 1935, 33, 349-408.—In these cases the physiognomy as a whole resembles more the Chinese type because of the pigment characteristics of the hair, skin and eyes, while body form, posture and movement are of the European type. Psychological aspects are not discussed.—P. Krieger (Leipzig).

[See also abstracts 5220, 5227, 5453, 5480.]

## SPECIAL MENTAL CONDITIONS

5404. Adler, A. *Trick and neurosis.* *Int. J. indiv. Psychol.*, 1936, 2, No. 2, 3-10.—There is nothing deprecatory in the term trick. Even the smallest child possesses the quality of trickiness, the ability to find a stratagem with which to meet his difficulties. All achievements result from the discovery of a stratagem for evading a difficulty. A nervous symptom is not produced intentionally. It results from the tension and shock produced when the patient is confronted with a new problem to which he does not feel equal. This does not constitute a neurosis. A neurosis is the preservation of symptoms to evade a difficulty. Analysis through individual psychology shows the individual his trick and convinces him that he has employed it unknowingly. It also shows him that his insecurity is not real.—M. F. Martin (West Springfield, Mass.)

5405. Blitzsten, D. R. *Psychoanalysis explained.* New York: Coward-McCann, 1936. Pp. x + 66. \$1.00.—An exposition for the layman, in five chapters: Why be analyzed? How psychoanalysis works; How it is done; Who is the analyst? Whence comes psychoanalysis?—R. R. Willoughby (Brown).

5406. Buxbaum, E. *Detektivgeschichten und ihre Rolle in einer Kinderanalyse.* (Detective stories and their role in the analysis of a child.) *Z. psychoanal.*

*Pädag.*, 1936, 10, 113-121.—Excerpts from a case record of a two-year analysis of a 12-year-old boy. School difficulties, behavior difficulties at home, and incessant reading of detective stories were the presenting symptoms. Analysis revealed active persecutory and sadistic fantasies. Analysis gradually revealed tendencies to bivalent identification with the uncle-guardian, the mother, doctors, nurses, and others, and a castration fear not recognized by the boy. The effect of the analysis and the character of the treatment are not reported. Interest of the author is centered in finding analogies for the boy's social conflicts and for his aggression-defense fantasies in the detective-criminal relationships, the protection and justice provisions, and the tortures and murders committed. These are all identification elements for the boy, some recognized and others subconscious.—O. N. de Weerd (Beloit).

5407. Christoffel, H. *Exhibitionism and exhibitionists.* *Int. J. Psycho-Anal.*, 1936, 17, 321-345.—A general discussion embracing the views of Laségue, Burlingham, Laforgue and Freud is given of genital exhibitionism followed by a detailed discussion of various non-genital forms of exhibitionism such as breath-holding, stammering, hirsutal forms, and anal exhibition, particularly the disguised anal exhibition involved in the public confessions of religious groups. The author then elucidates the orality of genital exhibitionists, their scopophilia, the post-pubertal character of genital exhibitionism, the passive phallicism, and the decreased oblativity and the increased captativity of exhibitionists.—M. H. Erickson (Eloise Hospital).

5408. Fairbairn, W. R. D. *The effect of the king's death upon patients under analysis.* *Int. J. Psycho-Anal.*, 1936, 17, 278-284.—A report is given of the clinical effect of the death of King George upon three analytic patients. All three were "characterized by a pronounced strain of oral sadism and a marked tendency to oral incorporation; and this fact would appear to have been in a large measure responsible for the extreme nature of their reaction to King George's death."—M. H. Erickson (Eloise Hospital).

5409. Graf, O. *Alkoholblutkonzentration und Leistung.* (The effect of alcohol concentration in the blood on work.) *Forsch. Fortschr. dtsh. Wiss.*, 1935, 11, 189.—Widmark's microscopic method makes possible for the first time serial studies on this problem. It was found that decrease in accomplishment was not directly proportional to the alcohol concentration of the blood, but approached more nearly to a quadratic function; i.e., while the alcohol concentration remained constant, working capacity decreased two- or threefold.—U. Dähnert (Dresden).

5410. Head, L., & Gizzard, C. *Brief introduction to psychoanalysis for beginners.* Atlanta, Ga.: Author, 1936. Pp. 51.—The writers, apparently recently analyzed, present a brief sketch of psychoanalytic theory and practice which is supposed to reduce the confusion of the first few weeks of analysis for others. A short glossary of psychoanalytic terms is included.—E. D. Hunt (Brown).

5411. Hellpach, W. *Die Bewusstseins-Unbewusstseins-Polarität der Seele.* (The conscious-unconscious polarity of the mind.) *Arch. ges. Psychol.*, 1936, 96, 221-239.—A review with comments by the author on the philosophy of the 18th century, beginning with Leibnitz and ending with Fichte, and that of the 19th century, beginning with Hartmann and ending with Schelling. The specific work of the 20th century is to discover the relationship between the metaphysics of the highly conscious self and that of the so-called subconscious. This problem is discussed in the light of the neural accompaniment to psychic phenomena. The author comments on insight, the flash of inspiration, and attempts to explain it as a "fore-seeing" psychic state, figuring in hypothesis, invention, etc. Instincts are discussed as evidenced in man and animals, as are association, memory, and apperception in their relationship to the solution of this problem.—A. B. Herrig (Michigan Central State Teachers College).

5412. Hellpach, W. *Psychotechnik des Unbewusstseins.* (Psychotechnology of the unconscious.) *Industr. Psychotech.*, 1936, 13, 104-116.—Psychotechnology of the 20th century, like the "science of the mind" of the 19th century, must develop as knowledge of the highest forms of consciousness. Psychotechnology, as did the "science of the mind," concerns itself with problems of the unconscious. No mind-body act can remain highly conscious. In certain cases it must be learned under conditions of highest consciousness, but invariably there follows what Meisterschaft calls a "transrationalization" of the elements of knowledge, i.e., the totality of the act is delivered to the unconscious. Various examples of "mnemotechnik," procedures of learning a language, and the development of certain standards of life are indicated as problems of psychotechnology which involve the unconscious.—B. Casper (Tennessee Valley Authority).

5413. Jones, E. J. *The future of psychoanalysis.* *Int. J. Psycho-Anal.*, 1936, 17, 269-277.—Stress is placed on past difficulties in the organization of psychoanalytical work and prediction is made of: (1) closer alliance with the medical profession and less lay analysis; (2) better understanding of training difficulties with a more critical selection of candidates; (3) no significant changes in technique in the near future; (4) marked changes within twenty years in the field of psychoanalytic theory.—M. H. Erickson (Eloise Hospital).

5414. Kris, E. *The psychology of caricature.* *Int. J. Psycho-Anal.*, 1936, 17, 285-303.—Discussion is given of the psychology of caricature in the light of sociological and clinical material and observations made on children. An elucidation is given of the pleasure gain from caricature, both simple and complex, and the relationship between the comic and infantile life as regards the use of primary processes. The tendentious character of caricature is regarded as serving to give it a specific quality which protects it from censorship, both external and internal, and which permits a satisfaction of instinctual claims by

its content and an appeasement of super-ego objections by its disguise. Finally the comic in tendentious forms also has its roots in the ambivalence conflict of adults and may represent the outcome of this, and may be regarded as a means of mastering simultaneously feelings of admiration and of aversion.—M. H. Erickson (Eloise Hospital).

5415. Kubie, L. *Practical aspects of psychoanalysis.* New York: Norton, 1936. Pp. xiv + 223. \$2.00.—(Not seen.)

5416. Levin, M. *The activation of a repressed impulse under apparently paradoxical circumstances.* *Int. J. Psycho-Anal.*, 1936, 17, 355-359.—A case is reported of a man with strongly repressed incestuous desires toward his mother. During a period of intensified hostility toward her, he dreamed of having intercourse with her. The interpretation is made that the external circumstances, by engendering an attitude of mother-hostility, served to give added protection against incestuous impulses. Thus, the ego, taking advantage of this added security, was enabled to grant these impulses a wider sphere of expression. Hence the conclusion is drawn that "when the defensive forces of the ego have been increased, the libidinal impulse may safely be given wider expression."—M. H. Erickson (Eloise Hospital).

5417. Passmore, J. A. *Psycho-analysis and aesthetics.* *Aust. J. Psychol. Phil.*, 1936, 14, 127-144.—Psychoanalytical explanations of art prove too much by failing to recognize their own functional limits of application. Much of the difficulty is due to confusing romanticism with beauty. Psychoanalysis is very revealing in the case of romanticism; but in other areas the artist is frequently on the side of the analyst rather than a proper object of his attention. Many artists, especially in the field of literature, have in fact possessed an insight that parallels that of the analyst. As distinguished from the romanticists their work is often "not a distorted presentation of real things, but a real presentation of distorted things." Psychoanalysis may thus be "of direct assistance to critical theory."—H. D. Spoerl (American International College).

5418. Peck, M. W. *The story of psychotherapy.* *Ment. Hyg., N. Y.*, 1936, 20, 353-365.—The history of psychotherapy is outlined from the magic of earliest times to the scientific work of Freud. Present-day practice still uses the older pre-Freudian methods. These are being gradually simplified and tend to emphasize known laws of mind rather than obscure forces. Freud's contributions have been adopted in part, especially in the direction of reeducation. Formal psychoanalytic procedure is employed in certain cases to correct difficulties that are too deep-seated to be reached by other methods. Transference, used intelligently, makes it possible to reveal the patient's unconscious mind. The psychotherapy of the future must perfect its procedures to apply to the varying degrees and kinds of nervousness among people of different cultural and economic strata.—H. S. Clapp (Grasslands Hospital, Valhalla, N. Y.)

5419. Pintus, G., & Falqui, A. Sulla sede di origine delle "Mioclonie ipniche fisiologiche." Ricerche sperimentali. (The site of origin of the physiologic myoclonias of sleep. Experimental studies.) *Riv. neurol.*, 1934, 7, 133-160.—(*Biol. Abstr.* X: 10956).

5420. Range, R. W. Der Einfluss von Narkotika auf die Tätigkeit der Grosshirnrinde des Kaninchens. (The influence of narcotics on cortical activity in the rabbit.) *J. Psychol. Neurol., Lpz.*, 1935, 46, 364-370.—The action of narcotics is specific according to architectonic fields, and different narcotics appear to have different effects. There are definite variations from the normal bioelectric picture of cortical changes in amplitude, frequency and periodicity. It is noteworthy that even in the deepest narcosis action currents can often be demonstrated.—P. Krieger (Leipzig).

5421. Riviere, J. A contribution to the analysis of the negative therapeutic reaction. *Int. J. Psychoanal.*, 1936, 17, 304-320.—The practical significance of Klein's theoretical conclusions concerning the depressive position to the problem of the negative therapeutic reaction is discussed. Analysis is made of the negative therapeutic reaction in relation to the narcissistic type of character resistance, the denial of object relations, the functioning of unconscious guilt and anxiety, organized system defense and resistance, particularly defense by omnipotent control, the general inaccessibility and the degrees of unconscious falseness and deceit of such refractory patients.—M. H. Erickson (Eloise Hospital).

5422. Seidler, R. Children's dreams. *Int. J. indiv. Psychol.*, 1936, 2, No. 2, 11-21.—To the individual-psychologist the dream manifests the life problem practically unveiled. The self-training of the individual ceaselessly maintains itself in the dream. Many examples are analyzed. Children exhorted to report their dreams will invent some, but the invented dream is just as much an expression of the child's life style as the one actually dreamed.—M. F. Martin (West Springfield, Mass.)

5423. Siemens, O. Psychologie der Beeinflussung. (The psychology of influence.) Homburg: Siemens-Verl.-Ges., 1935. Pp. 241.—R. R. Willoughby (Brown).

5424. Urstadt, E. Die Bedeutung der neueren Ergebnisse der Physiologie des Schlafes für die Theorie der Hypnose und die Theorie in der Hypnose erzielten Wirkungen. (The significance of recent findings in the physiology of sleep for the theory of hypnosis and the theory of effects achieved in hypnosis.) Coburg: Tageblatt-Haus, 1934. Pp. 32.—R. R. Willoughby (Brown).

[See also abstracts 5265, 5279, 5298, 5448, 5459, 5477, 5521, 5525, 5558, 5561, 5562, 5572.]

#### NERVOUS AND MENTAL DISORDERS

5425. Ackerman, N. W., & Menninger, C. F. Treatment techniques for mental retardation in a

school for personality disorders in children. *Amer. J. Orthopsychiat.*, 1936, 6, 294-312.—The therapeutic point of view at Southard School and the techniques of treatment employed in the care of children presenting mental retardation of mild degree are outlined.—J. McV. Hunt (Brown).

5426. Anderson, C. L. Epilepsy in the state of Michigan. *Ment. Hyg., N. Y.*, 1936, 20, 441-462.—Data pertaining to epilepsy in Michigan are analyzed with reference to factors of significance for public health, medical research, social welfare, state administration, education, mental hygiene, and the general public welfare. Data were obtained from the state colony for epileptics, the state hospital for mental disorders, institutions for mental defectives, penal institutions, and county infirmaries. Data relating to epilepsy in the general population were secured through a study of the population in one section of the state. The results of the study are given in 15 tables.—H. S. Clapp (Grasslands Hospital, Valhalla N. Y.)

5427. Anderson, F. N. A mental-hygiene survey of problem Indian children in Oklahoma. *Ment. Hyg., N. Y.*, 1936, 20, 472-476.—A brief historical statement is given in regard to the Indians of Oklahoma. Thirty or forty years ago the government established so-called boarding schools; in some cases these afforded a secondary education. Recently Indian day schools have been established. In this survey 235 problem cases were studied. Each case received not only a physical and neurological examination but also psychological tests and psychiatric interviews. It was found that a relatively large number of children who had been considered feeble-minded were retarded because of a lack of opportunity. About 75 of the group fell in this class. 30 were too defective to adjust in the community. 20 cases of primary health conditions were discovered. Health and hospital facilities are limited in this region. Syphilis, gonorrhea and tuberculosis are problems in this group. Serious anti-social problems were few. A fundamental change in the educational system is needed.—H. S. Clapp (Grasslands Hospital, Valhalla, N. Y.)

5428. Bagghi, B. K. Mental hygiene and the Hindu doctrine of relaxation. *Ment. Hyg., N. Y.*, 1936, 20, 424-440.—Certain practical methods of relaxation are described. These methods are based upon the Hindu doctrine of quiescence. Relaxation in America will be motivated by a desire for increased success and health rather than by a desire to satisfy a religious need. The practice of relaxation will result in decreasing hypertension and in stimulating balanced activity.—H. S. Clapp (Grasslands Hospital, Valhalla, N. Y.)

5429. Bally, G. Ein Fall von traumatischem Mutismus. (A case of traumatic mutism.) *Z. Kinderpsychiat.*, 1936, 3, 23-33.—History and treatment of a case of traumatic neurosis with hysterical symptoms in a 6-year-old girl.—D. Shakow (Worcester State Hospital).

5430. Bie, V. Om potensforstyrrelser hos manden og deres behandling. (On disturbances of sexual potency in men and their treatment.) *Ugeskr. Laeg.*, 1936, 98, 690-704.—On the basis of a general critical treatise on the various forms of sexual impotence, the writer concludes that the problem is such a complicated one of mental functions, reflex pathways, and their interactions with hormones and sexual organs, that minute case histories must furnish the only real basis for discussion. 40 abbreviated case histories from the writer's medical practice are offered, illustrating such forms of impotence as "endocrine impotence," impotence in connection with senile or arteriosclerotic changes, impotentia paralytica, organically conditioned e juvandi, coitus protractus s. incompletus, and mentally conditioned impotence. The mentally caused or conditioned impotence is the type most often met with in medical practice. Conclusions and suggestions for therapy are summed up in eight general points.—M. L. Reymert (Mooseheart Laboratory for Child Research).

5431. Blatz, W. E. Modern mental hygiene. *Relig. Educ.*, 1936, 31, 189-191.—Modern mental hygiene emphasizes positive rather than negative aspects. Its aim is to increase man's efficiency in running himself. Any relevant study which contributes to an understanding of the mechanism by which we grow up efficiently and adequately "is grist to the mill."—R. Goldman (Worcester State Hospital).

5432. Burt, C. The subnormal mind. New York, London: Oxford Univ. Press, 1935. Pp. 368. \$3.75.—(Not seen).

5433. Cobb, S. A preface to nervous disease. Baltimore: Wood, 1936. Pp. vii + 173. \$2.50.—"The book is written to give to students of medicine . . . the facts and correlations needed to understand the simpler workings of the central nervous system." It has been the author's aim "to mention only those anatomical structures the physiology of which is known, to discuss only physiological processes for which there is at least a fairly well substantiated anatomical correlation, and to describe only the pathology that has fundamental significance. . . . The book is a preface, to start the student with a three dimensional orientation towards neurology and psychiatry—a brief, concurrent anatomy, physiology, and pathology." Index and bibliography.—D. Shakow (Worcester State Hospital).

5434. Dretler, J. Über den Einfluss atmosphärischer Veränderungen auf die epileptischen Anfälle. (The influence of atmospheric changes on epileptic attacks.) *Allg. Z. Psychiat.*, 1935, 103, 223-239.—Analysis of 28,000 cases proves that a relationship exists between atmospheric conditions and epileptic attacks. No single type of weather is responsible for frequent seizures, but sudden changes are important. The influence of constant or cyclic climatic factors is not apparent.—P. Krieger (Leipzig).

5435. Dugas, L. Sur la dépersonnalisation. (On depersonalization.) *J. Psychol. norm. path.*, 1936, 33, 276-283.—The phenomenon of depersonalization is often confused with other psychic troubles which it

resembles in certain ways. Thus Ribot thought he recognized it in a loss of feeling of reality. Paramnesia also has been confused with it, but in paramnesia the subject is entirely deceived by the illusion, while in depersonalization the subject is conscious of his error. True depersonalization is characterized by a feeling of loss of ego. Cerebral fatigue is always its origin.—R. E. Perl (New York City).

5436. Friedjung, J. K. Organische Ausdrucksmittel der Kinderneurosen. (Organic expression devices in child neuroses.) *Z. Kinderpsychiat.*, 1936, 3, 3-9.—A discussion of a variety of organic symptoms to be found in child neurotics and an emphasis on the necessity for treating the underlying bases rather than the symptoms.—D. Shakow (Worcester State Hospital).

5437. Glaus, A. Über Pfropfschizophrenie und schizophrene Frühdemenz. (On intermittent schizophrenia and early schizophrenic dementia.) *Schweiz. Arch. Neurol. Psychiat.*, 1936, 37, H. 2; 38, H. 1. Pp. 47.—R. R. Willoughby (Brown).

5438. Harreveld, A. van, & Kok, D. J. A propos de la nature de la catalepsie expérimentale. (On the nature of experimental catalepsy.) *Arch. néerl. Physiol.*, 1935, 20, 411-429.—The symptoms of experimental catalepsy can be reduced either to phenomena that are produced by the disappearance of certain reactions or to normal reflexes that can externalize themselves only when other reflexes have been eliminated. This argues in favor of the belief that experimental catalepsy is based on a partial paralysis of the central nervous system.—C. P. Stone (Stanford).

5439. Horwitz, W. A., & Harris, M. M. Study of a case of cyclic psychic disturbances associated with menstruation. *Amer. J. Psychiat.*, 1936, 92, 1403-1412.—R. Goldman (Worcester State Hospital).

5440. Ionasiu, L. Un test de memorie vizuală imediată aplicat la bolnavi mintali. (A test of immediate visual memory applied to mental patients.) *Bul. Spital. Bol. ment. nerv. Sibiu*, 1936, 62.—R. R. Willoughby (Brown).

5441. Ionasiu, L., & Sumea, —. Timpul de reacțiune psihomotorică la unii bolnavi mintali. (Psychomotor reaction time in some mental patients.) *Bul. Spital. Bol. ment. nerv. Sibiu*, 1936, 65.—R. R. Willoughby (Brown).

5442. Jongbloed, J. Anoxie et catatonie expérimentale. (Anoxia and experimental catatonia.) *Arch. néerl. Physiol.*, 1936, 21, 144-161.—The author, working with cats, was able to provoke all of the symptoms appearing in experimental catatonia by the following methods: interfering with the supply of oxygen in air breathed by the cat; interfering with the transportation of oxygen by the blood; and interfering with the utilization of oxygen by the tissues. He concludes that the fundamental cause of the state of experimental catalepsy is a condition of anoxia of the central nervous system or of the organs controlled by this system.—C. P. Stone (Stanford).

5443. Körner, G. Zur Psychopathologie des amnestischen Syndroms. (The psychopathology of the amnesic syndrome.) *Mschr. Psychiat. Neurol.*, 1935, 90, 177-216.—R. R. Willoughby (Brown).

5444. Lechner, J. Die Ursache des Schwachsinn bei Bonner Hilfsschulkindern. (The causes of feeble-mindedness in Bonn opportunity-school children.) *Veröff. MedVerw.*, 1935, 45. Pp. 46.—R. R. Willoughby (Brown).

5445. Pollock, H. M. The family-care system of Scotland. *Ment. Hyg., N. Y.*, 1936, 20, 414-423. —The act regulating the care and treatment of lunatics was passed in Scotland August 25, 1857. It provided for a supervised system of family care of mental patients. One of the weaknesses of this system is the dominance of local authorities. Inadequate psychiatric supervision of the mentally ill is another weak spot in this system. There is a lack of supervision of family-care patients by social workers and occupational therapists. There is also no provision for social life. Despite these weaknesses the Scotch system is one to study carefully. The guardians, sharing their homes with the patients, show skill and devotion to their task. The fact that family care has continued over eighty years indicates its value as a supplement to institutional treatment.—H. S. Clapp (Grasslands Hospital, Valhalla, N. Y.)

5446. Preda, G. Câteva însemnări asupra organizațiilor psihiatrice din Ardeal. (Communications on psychiatric organizations in Transylvania.) *Bul. Spital. Bol. mint. nerv. Sibiu*, 1936, 112-115.—R. R. Willoughby (Brown).

5447. Preda, G. Darea de seamă asupra activității spitalului de boli mintale și nervoase Sibiu 1935. (Annual report on the activities of the hospital for nervous and mental diseases, Sibiu, 1935.) *Bul. Spital. Bol. mint. nerv. Sibiu*, 1936, 118-145.—R. R. Willoughby (Brown).

5448. Repond, A. Freud et la psychiatrie infantile. (Freud and child psychiatry.) *Z. Kinderpsychiat.*, 1936, 3, 14-16.—"Present surgery is not conceivable without the ideas of antisepsis and asepsis, no more is modern psychiatry without psychoanalysis."—D. Shakow (Worcester State Hospital).

5449. Roxo, H. Méthodes spéciales de traitement des maladies mentales. (Special methods of treatment for mental diseases.) *Ann. méd.-psychol.*, 1936, 94, Part 2, 195-209.—The author is director of the psychiatric clinic in Rio de Janeiro. He believes that all psychoses can be cured and should be treated. In this article he gives the medications he uses for each type of psychosis. This includes a regular routine medication for feeble-mindedness: thyroid extract from the 1st to the 10th of each month, extract of thyme from the 11th to the 21st, and extract of hypophysis from the 22nd to the 31st. The psychasthenics are provided with medicine and sent out with the instructions to take a dose whenever they are about to become fearful. Autohemotherapy is used on some psychotics, including part of the schizophrenics. Bismuth is given most frequently

for syphilis and malaria therapy for general paresis. Occupational therapy is used to direct the patients' attention away from their symptoms.—M. B. Mitchell (N. Y. A., Concord, N. H.)

5450. Sadler, W. S. Theory and practice of psychiatry. St. Louis: Mosby, 1936. Pp. 1231. \$10.00.—R. R. Willoughby (Brown).

5451. Schindlmayr, L. J. Fehldiagnosen bei Hirnverletzten. (Erroneous diagnosis in brain injuries.) Köln: Pick, 1935. Pp. 48.—R. R. Willoughby (Brown).

5452. Schlömer, G. Leitfaden der klinischen Psychiatrie. (Guide to clinical psychiatry.) München: Müller & Steinicke, 1936. Pp. 216. RM. 4.—R. R. Willoughby (Brown).

5453. Sjögren, T. Vererbungsmedizinische Untersuchungen über Huntingtons Chorea in einer schwedischen Bauernpopulation. (Studies on the heredity of Huntington's chorea among a Swedish peasant population.) *Z. menschl. Vererb.- u. Konst-Lehre*, 1935, 19, 131-165.—88 cases of Huntington's chorea were found in two isolated parishes. They were all descended from five couples who were probably interrelated. The disease appeared to follow a monohybrid dominant line.—P. Krieger (Leipzig).

5454. Targowla, R. L'état actuel du syndrome subjectif des traumatismes cranio-cérébraux chez les blessés de la guerre 1914-1918. (The present state of the subjective syndrome of cranio-cerebral trauma in those wounded in the war, 1914-1918.) *Ann. méd.-psychol.*, 1936, 94, Part 2, 153-176.—A French presidential decree in 1929 regarding military pensions took into account those with both organic bone lesion in the head and functional disorders credited to shock. The subjective symptoms acceptable for pensions included headache (acute and chronic), dizziness, vertigo, ill-humor, emotional excesses, anguish, fatigue, insomnia, loss of memory, and vascular-motor troubles. These symptoms are so frequently found in common disorders such as arteriosclerosis, syphilis, and nephritis that they do not furnish means for a diagnosis. This is true especially when an ex-soldier has apparently been well for years and then develops these symptoms, even though he had shown them temporarily during the war period. Only 3 out of 80 wounded veterans showed symptoms uncomplicated by other recognizable organic diseases.—M. B. Mitchell (N. Y. A., Concord, N. H.)

5455. Unger, H. Geisteskrankheit und Handschrift. (Mental disease and handwriting.) *Z. ges. Neurol. Psychiat.*, 1935, 152, 569.—Graphological guides for the recognition of manic-depressive insanity, epilepsy, paranoia, paresis, schizophrenia, hysteria, neurasthenia, and alcoholism by analysis of the handwriting.—P. Krieger (Leipzig).

5456. [Various.] Collected papers: Department of Diseases of the Nervous System, Harvard Medical School. (Vol. 6.) Boston: Eliot Press, 1936.—Reprints.—R. R. Willoughby (Brown).

5457. Vater, E. *Activitatea dispensarului neuro-psihiatric*. (Annual report of the activities of the neuropsychiatric clinic at Sibiu.) *Bul. Spital. Bol. mint. nerv. Sibiu*, 1936, 148-153.—R. R. Willoughby (Brown).

[See also abstracts 5322, 5384, 5385, 5395, 5461, 5482, 5483, 5537.]

#### PERSONALITY AND CHARACTER

5458. Müller-Freienfels, R. *Die zeitgenössische Charakterologie*. (Contemporary characterology.) *Industr. Psychotech.*, 1936, 13, 97-103.—The present status of the science of character is surveyed. The chief fields in this science are "expression research," individualized principles of structure, and typology. The most important methods and results in these fields are summarized.—B. Casper (Tennessee Valley Authority).

5459. Neuer, A. *Courage and discouragement*. *Int. J. indiv. Psychol.*, 1936, 2, No. 2, 30-50.—What the layman expects from the science of mind is an understanding of his own mind and those of others, but if, before Adler's time, one turned to a university professor of psychology, he received stones for bread. The individual can be understood only in terms of the purposes he sets for himself, but modern science feared to recognize purposes. Poets, politicians, teachers, judges and advocates, physicians, and even detectives deserve the title of true psychologists, but they are not scientific. What makes a science scientific is the guiding point of view without which the separate facts can not be classified or even described. The mind is naturally "courageous," striving for the realization of the ideal human community. Individuation, manifested as "will to power," is nothing more than overcompensation for discouragement. An illustrative case history is analyzed.—M. F. Martin (West Springfield, Mass.).

5460. Ostancow, P. *Tempérament et caractère*. (Temperament and character.) *Ann. méd.-psychol.*, 1936, 94, Part 2, 177-186.—Temperament and character are distinguished as being the quantity and quality of reactions respectively. A long questionnaire is given, based on the work of several men, to determine the pre-psychotic character and temperament.—M. B. Mitchell (N. Y. A., Concord, N. H.).

5461. Smith, R. B. *Growth in personality adjustment through mental hygiene: an experimental study*. Albany, N. Y.: New York State Educational Department, 1936. Pp. 71.—The study was undertaken to determine whether measurable changes in personality adjustment can be produced in college students as a result of participation in an informal non-credit course in mental hygiene. The study also attempted to determine the amount of spontaneous interest in such a course, and the types of questions concerning personality adjustment of most concern to students of this age. The study was set up on an experimental basis, and an attempt made to secure comparable experimental and control groups. The experimental group met for class-room discussion only seven times. The statistical evidence upholding

the value of the course as an aid in personality adjustment did not meet the accepted criteria. The equality of the motivation of the experimental and the control groups was not assured, and it was difficult to evaluate the effect of the new environment of the college on either group. A considerable amount of interest in the course was found to exist, and the writer is of the opinion that such a course has much to offer to colleges and universities.—J. Brockwell (Brown).

5462. Stagner, R., & Katsoff, E. T. *Personality as related to birth order and family size*. *J. appl. Psychol.*, 1936, 20, 340-346.—Differences in birth order, with few exceptions, do not result in significant differences in the Bernreuter personality score for a group of 430 University of Wisconsin men. More independence is indicated for those dispossessed by a later-born. A slight advantage in personality test scores is shown for small families.—R. S. Schultz (Psychological Corporation).

5463. Teagarden, F. M. *The effect of present conditions on personality development*. *Relig. Educ.*, 1936, 31, 183-188.—There are no records available which tell us what is happening to personality development. Suggestions for investigation of the factors which are playing a part in the personality development, such as financial insecurity, family quarrels, truancy and delinquency, malnutrition and other physiological aspects, proper relaxation by adults, etc., are given.—R. Goldman (Worcester State Hospital).

5464. Thorndike, E. L. *The value of reported likes and dislikes for various experiences and activities as indications of personal traits*. *J. appl. Psychol.*, 1936, 20, 285-313.—Lists covering item groups such as things, people, bodily exercise, beauty, system, mastery or domination over persons, novelty, gregariousness, conflict, etc., were rated on a 5-point like-dislike scale. These specific items, reliability, intercorrelations, relationship to sex and intelligence and broader implications of results are presented. Com-

parisons are made between  $L - D$  index and  $\frac{L - D}{L + D}$

ratio. There is a tendency to like rather than dislike, "to enjoy rather than be annoyed by the experiences and activities of our list. The understanding of it is crucial concerning the methodology of measuring personal traits."—R. S. Schultz (Psychological Corporation).

[See also abstracts 5389, 5425, 5492, 5511, 5522, 5585.]

#### SOCIAL FUNCTIONS OF THE INDIVIDUAL

5465. Ai, W. [An analysis of the meanings and sounds of Chinese characters.] *Educ. Res. nat. cent. Univ. (Chinese)*, 1935, 3, No. 1, 67-143.—In a previous study (see X: 2186) it has been found that in all 10 grades of pupils tested the scores of knowing sound (pronunciation) but not meaning of a Chinese character were much better than those of knowing meaning but not sound. In the present paper an

analysis of the proportion of these two kinds of Chinese characters which all belong to the half-learned category was made. It was found that in most of the 10 grades tested, those characters with only sound known were twice as many as those with only meaning known, the smallest ratio being 1 to .47 and the largest 1 to .68, with an average ratio of 1 to .576. When plotted into curves, we saw that in the curve for characters with only sound known there were two peaks, one between elementary grades VIA and VIB and another around junior class IIIB; in the curve for characters with only meaning known, the rise and fall were not so sudden, its peak was not so high but was scattered and then fell slightly at senior class III. When the difficulty of the sound and meaning of a Chinese character was rated in 5 degrees, then in 100 Chinese characters there were 15, 3, 1, 2, and 21 characters whose sound and meaning both belonged to the uppermost, upper, middle, lower, and lowermost degrees respectively, and there were 58 characters whose sound and meaning had unequal difficulty. It was also found that the scores of learning Chinese characters were somewhat related to the "rules of the six kinds of characters," since by a sampling analysis of the characters used in the study we saw that the "characters which join to another part to acquire sound" were most numerous, next came "those which take their sense from the component parts," while "those which are arbitrary" and "those which bear a resemblance to the objects" were very few.—C.-F. Wu (Nat. Res. Inst. Psychol., Acad. Sinica, Nanking).

5466. [Anon.] Students' dissertations in sociology. *Amer. J. Sociol.*, 1936, 42, 249-250.—Of special interest to psychologists are: A study of the prejudices of social workers, L. Goldman, Southern California; A study of changing sex mores among selected groups of young people, J. H. Graves, Stanford; Assimilation of second generation Japanese on the island of Hawaii, F. Kubo, Hawaii; Concomitant social factors in 24 endocrine cases, L. M. LaMorte, St. Louis.—F. A. Mote, Jr. (Brown).

5467. Baumgarten-Tramer, F. Die Eignung der Frau im Dienste der Gemeinnützigkeit. (The suitability of women for public service.) *Zbl. Schweiz. gemeinnütz. Frauenver.*, 1936, 20, No. 3, 49-55.—Citing the public work of such women as Jane Addams and Bleuler-Wasser, the author points out the falsity of the belief that woman achieves her best service only in individual, personal contacts, and that whatever public service she engages in is but a sublimation of her maternal instinct. By the questionnaire method (number not stated) the motives underlying the work of women engaged in public service were investigated. Contrary to the belief that the maternal instinct (with sublimation) plays an important role, it was found that such service is grounded in sympathy and empathy, in a sense of righteousness, in intellectual apprehension of needed service, in a social ideal, and in a desire to transcend the limits of the personal ego and find a fuller realization of life in helping others. The desire to help others was listed seven times more

frequently as a reason for social (public) work than those desires directly grounded in the maternal instinct.—G. F. J. Lehner (Brown).

5468. Brake, J. Der Forschungsstand der Rassenpsychologie. (The present state of research in racial psychology.) *Erziehung*, 1935, 2, 1-36.—A review of the methods of Clauss, Rutz and others. The actual basis for the problematic results in German racial psychology lies, not in any illusion as to the reality of its object, but in the extraordinary difficulty of the task, which requires new historical methods and viewpoints derived from biology.—P. Krieger (Leipzig).

5469. Carr, R. H. The Indiana group in *American Men of Science*. *Science*, 1936, 84, 250-252.—This article takes from *American Men of Science* the 1109 scientists who have either (1) been born in Indiana, (2) received a degree from an Indiana college or university, or (3) resided there at the time of writing of *American Men of Science*. This group is discussed according to choice of occupation, women scientists and starred names, present distribution of Indiana scientists, and average age of the group (47 years). The psychologists (number not given) are included in the group of 74 men falling under the heading "Philosophy, Education, Psychology."—F. A. Mote, Jr. (Brown).

5470. Chen, H. P. [A general critical review of the studies of vertical and horizontal reading of Chinese characters.] *Educ. Rev.*, 1935, 25, No. 10, 53-68.—This paper reviews, evaluates and criticizes the studies of vertical and horizontal reading of Chinese characters as regards the materials and methods used, the results obtained, and the opinions held by different investigators. A concise summary of these studies is given in a tabular form, giving the year of publication, the author, the subjects, material and method used, and the results obtained. In the first place, the present reviewer points out that in the last two decades or so there were in all 13 persons who had done research work in this line, and there were in all 11 papers published or unpublished. In the second place, it is pointed out that there were some defects in all previous reviews, viz., (1) certain studies had been omitted, such as Y. H. Chang's and C. Y. Sheng's; (2) certain papers (viz., S. K. Chou's) dealing with theoretical and methodological discussion of the problem had also been neglected; (3) there was a general tendency to emphasize mere review of the experimental results rather than systematic description of the experiments; and (4) there was a general lack of strict criticism of the materials and methods used in the various studies. Then, an evaluation of the materials so far used shows that "verses with seven characters to a line" as has been employed in S. K. Chou's experiments are the most suitable material for a study of the reading of Chinese characters. An evaluation of the experimental methods so far used shows that the tachistoscopic work-limit method, as has been employed by S. K. Chou, seems to be a more suitable technique for the problem. An evaluation of the experimental findings

and conclusions obtained shows that neither does the opinion for the superiority of horizontal over the vertical reading (Tu, and Ai) have sufficient justification, nor does the opinion that there is no difference between vertical and horizontal reading but that both are conditioned by habits and training (Chen, etc.) have definite evidence. On the other hand, S. K. Chou has pointed out that among the factors which influence the speed of reading, the Gestalt and the relative positions of Chinese characters are by far more important ones than the general direction of reading. Thus, it would seem not necessary to pay too much attention to this problem of horizontal and vertical reading.—C.-F. Wu (Nat. Res. Inst. Psychol., Acad. Sinica, Nanking).

5471. Doll, E. A. Preliminary standardization of the Vineland social maturity scale. *Amer. J. Orthopsychiat.*, 1936, 6, 283-293.—J. McV. Hunt (Brown).

5472. Emery, E. V. First interviews as an experiment in human relations. *Amer. J. Orthopsychiat.*, 1936, 6, 268-282.—The writer discusses some of the subtle factors involved in the relationship between social worker and client. Many of these factors are thrown on a social or cultural background in order to be better understood.—J. McV. Hunt (Brown).

5473. Fei, C. H. [A study of children's errors in writing Chinese characters.] *J. exp. Educ.* (Chinese), 1935, 2, No. 3, 79-115.—An error in writing may be either a slip of the pen or an erratum. The former is a wrongly written character which, due to an unnecessary addition or subtraction of one or two or several strokes, becomes "formless" and cannot represent any Chinese character at all. The latter is also a wrongly written character which, however, can represent another Chinese character of similar form or pronunciation or meaning. The material used for analysis in this study consisted of 932 slips of the pen and 1686 errata which were secured from 18,345 pieces of elementary-school children's written work (including diaries and compositions) and a large number of errata collected by some elementary-school teachers. There were 338, 172, and 20 slips of the pen which had frequencies above 4, 10, and 50 respectively; 494, 85, and 15 errata which had frequencies above 3, 10, and 40 respectively. It was found that the number of slips of the pen was inversely proportional to the grade, i.e., there were fewer slips of the pen in the upper grades and more in the lower grades. The number of errata followed the distribution of a normal curve, i.e., there were fewer errata in both upper and lower grades and more in the middle grades. The basic causes of error in writing Chinese characters were found to be (1) incomplete mastery of the characters, (2) lack of analysis and comparison of the similarities between different characters, and (3) carelessness in writing. The chief source of errata was similarity of form and pronunciation of the characters; more than half of the errata belonged to this category. Among the easily committed errata, most cases came from the characters whose forms are almost identical; next came the characters whose

meanings are interchangeable; next came the particles of similar pronunciation. The corrective measures for errata and slips of the pen are outlined. The essential principle lies in the utilization of transfer effects so as to facilitate the learning of new characters and in the avoidance of conflicts so as to minimize the occurrence of mistakes. In order to avoid the phenomenon of conflicts, an analysis and a comparative study of the form, pronunciation, and meaning of the newly introduced characters are necessary. The above-mentioned 338 easily committed slips of the pen and 494 errata, as well as samples of error in writing Chinese characters are given in full. Previous studies of elementary-school children's errata have been reviewed.—C.-F. Wu (Nat. Res. Inst. Psychol., Acad. Sinica, Nanking).

5474. Fenichel, O. Die schwarze Köchin. (The black cook.) *Z. psychoanal. Pädag.*, 1936, 10, 103-105.—Presents a stanza sung in a game. The game is clearly a picture of the process of trial by ordeal through elimination of the innocent by counting out. The last one remaining is the "black cook," who probably had her prototype in the witch's kitchen where black magic was practiced.—O. N. de Weerd (Beloit).

5475. Ferguson, L. W. Attitudes of Stanford students toward some U. S. presidents. *Sch. & Soc.*, 1936, 44, 190-192.—H. L. Koch (Chicago).

5476. Gibson, A. B. Social psychology: a philosophical analysis. *Aust. J. Psychol. Phil.*, 1936, 14, 81-105.—As distinct from "individual" psychology social psychology depends upon the existence of a group mind. McDougall's inability to establish this entity is reinforced by Durkheim's demonstration that the items said to constitute it are objects of sociology alone. Since all that exists is "groups of minds," social psychology becomes simply a branch of "individual" psychology. It is "the study of individuals in their relations with other individuals, in so far as those relations can be stated in general terms. In this sense it is not only a legitimate science but constitutes the framework for the closer and more restricted investigations of individual psychology in the narrow sense."—H. D. Spoerl (American International College).

5477. Haldar, R. Art and the unconscious. *Indian J. Psychol.*, 1935, 10, 191-195.—The author advances the hypothesis that esthetic sentiment and fine arts have their roots in the unconscious. Art is classified as anal-erotic, auto-erotic, and narcissistic.—R. W. Russell (Clark).

5478. Kerridge, P. M. T. The effect of hearing on speech. *J. Physiol.*, 1936, 87, 2P.—The author arranges common speech defects in order of increasing deafness as follows: (1) monotony of tone, (2) omission of *s*, *sh*, *ch* (high-frequency components), (3) unnatural intonation, (4) poor phrasing and lack of rhythm, (5) slow speed, and (6) bad articulation.—M. A. Rubin (Clark).

5479. Klein, V. Der ungarische Hexenglaube. (The Hungarian belief in witches.) *Z. Ethn.*, 1935, 66, 374-402.—Hungarian folk-lore recognizes five

types of witches: the sorcery student; the magician; the witch; the beautiful woman; the witch with the iron nose. The last plays a part in fairy tales; the others often blend into one another.—*P. Krieger* (Leipzig).

5480. **Legrün, A.** Über die Handschrift von Geschwistern. (The handwriting of siblings.) *Z. pädag. Psychol.*, 1936, 37, 151-157.—Legrün studied the handwriting of 51 pairs of siblings between 8 and 14 years old in the Vienna schools. The difference between the ages of each pair was less than 2 years. He found that the similarity of handwriting among children of the same family is not great (4% much alike; 14% somewhat alike; 82% unlike). All the pairs of brothers showed dissimilar writing. The less the difference in age, the greater the resemblance, although Legrün does not lay much stress on differences in maturity of the script in the judgment of similarity. The degree of carefulness was about the same in each pair of siblings.—*M. E. Morse* (Baltimore).

5481. **Leigh, R. D.** Group leadership, with modern rules of procedure. New York: Norton, 1936, Pp. 259. \$2.50.—*R. R. Willoughby* (Brown).

5482. **Malzberg, B.** Migration and mental disease in negroes. *Amer. J. phys. Anthropol.*, 1936, 21.—The author finds that admissions of negroes to institutions for mental treatment in New York include a much larger proportion of migratory than of New York-born persons, and suggests that environmental influences are operative and that the supposed special tendency of negroes to mental disturbance is very dubious.—(Courtesy *Eugen. Rev.*)

5483. **Müller, M.** Neurose und Kriminalität. (Neurosis and criminality.) *Schweiz. Arch. Neurol. Psychiat.*, 1935, 36, 112-130.—A direct relationship between neuroses and criminality appears very doubtful, first, because in most delinquent neurotics the basis for the actualization of their criminal behavior is a defective development of the normative functions; and second, because in apparently criminal (i.e. high-grade, ethical) neurotics, the transition from latent to manifest criminality is determined by accidental, extra-neurotic factors.—*P. Krieger* (Leipzig).

5484. **Neumann, J.** Erweiterung der Girgensohn'schen experimentellen Methode durch ganzheitliche und tiefenpsychologische Methoden. (Amplification of Girgensohn's experimental method through totality and depth-psychological methods.) *Z. ReligPsychol.*, 1935, 8, 79-102.—In all religious attitudes Neumann distinguishes between personal and objective constants of value. Spranger's "political man" is not only the aggressive man who subordinates all objective values to his ego, but the passive depressive man as well, who merely hides his activity behind apparently passive means. This movement from depressive to aggressive within a single personality distinguishes Adler's "nervous" characters, who strive for security. In reality, all psychic life is centered upon objective values. If holiness has an intrinsic worth, belief is the recognition of this and

the attitude toward it, while unbelief arises from a conflict of values.—*P. Krieger* (Leipzig).

5485. **Nieuwenhuis, A. W.** Die Entstehung des Sexualwortgenus als Kulturelement des Sexualtotemismus. (The origin of classification of sex words as a cultural element in sex totemism.) *Int. Arch. Ethnogr.*, 1935, 33, 35-97.—Among the Kabagas and East Australian natives the classification of sex words is an outgrowth of the sex-totemistic idea of nature, thus forming a cultural element in the sex-totemistic organization of the tribe. The psychological basis for the category of a sex word may cease in consequence of changes in tribal customs, but the gender is retained through the social antithesis of men's and women's groups, although other influences determine the gender of other classes of words.—*P. Krieger* (Leipzig).

5486. **Ogburn, W. F., & Jaffe, A. J.** Independent voting in presidential elections. *Amer. J. Sociol.*, 1936, 42, 186-201.—Fluctuations in the percentage of the voters voting for a particular political party at presidential elections have been increasing greatly since the beginning of the century, but no such trend was observable in the last quarter of the nineteenth century. This trend seems to indicate a growth among voters of independence from party. The counties that have had the greatest increase in percentage of independent voters so measured since 1920 have been those (1) with the largest percentage of young voters, (2) the largest proportion of men, (3) the smallest percentage of native-born citizens of native-born parents, (4) the largest percentage of city people, (5) the most rapid growth, (6) the highest plane of living, (7) the least increase in wages, and (8) the most extensive practice of independent voting in the past.—(Courtesy *Amer. J. Sociol.*)

5487. **Patkin, A.** Law as a psychological phenomenon. I. *Aust. J. Psychol. Phil.*, 1936, 14, 106-126.—In a course of lectures given at Leningrad before the revolution, Leo Petrajitzky formulated an "introduction to the study of law and morals, principles of an emotional psychology." This work seeks to provide jurisprudence with an adequate psychological theory of motivation. Arriving independently at McDougall's position concerning the scope of emotions, Petrajitzky distinguished a class of "self-sustaining" motives, non-psychological in origin, which correspond to "emotions of duty or ethical emotions." These provide a foundation for law as a strictly psychological phenomenon.—*H. D. Spoerl* (American International College).

5488. **Rombach, J.** Untersuchungen über das Gestaltprinzip im ganzheitlichen Lesen. (Studies on the Gestalt principle in synthetic reading.) *Z. pädag. Psychol.*, 1936, 37, 35-44; 81-89.—Rombach studied recognition of word pictures and single letters in 200 kindergarten children, 6 years old, who knew nothing of reading. His experiments show that the child advances from a diffuse sensory totality, unanalyzable by Gestalt methods, through vague word forms to an articulated spatial-geometrical total perception, and finally automatically reaches the

elements. The recognition of word pictures was slightly better than of single letters. The perception of word forms and the spontaneous work on them follows Gestalt principles. The general total character (length, demarcation, capital and long letters, beginning and end) play a large part in perception and recognition. The spatial-geometrical relationships are the first to be differentiated from the diffuse totality and are the bearers of the word Gestalt. Acoustic word forms follow the same laws as visual word Gestalt. The child's difficulty is connected not only with the physiological and phonetic character of the single sound but also with its setting in the whole word.—*M. E. Morse* (Baltimore).

5489. *Schmeling, G. K. Niederdeutschland, Landschaft und Volk.* (Low Germany, the land and people.) *Z. angew. Psychol.*, 1936, 50, 257-277.—Upon the basis of an extended bibliography of Low Germany, the author compares the character (topography, etc.) of the land with the character of its people, indicating at the same time the possibility of differences between peoples in the various provinces. Words often found in the literature descriptive of the Low German are: reserved, earnest, stubborn, independent and self-reliant, realistic, calculating, honest, gruff, religious, in part melancholic, etc. These characteristics may be grounded in such things as ground temperature and radiations, ground electricity, vegetation, blue-green colors of the country, its spaciousness, etc. Further insight into the character of the Low German is gained by an analysis of his work, family and communal life, art, and language. A list of outstanding Low German men in various fields is given. Except for several book reviews, the remainder of volume 50 consists of the index of volumes 26 to 50.—*G. F. J. Lehner* (Brown).

5490. *Sirokogorov, S. M. Versuch einer Erforschung der Grundlagen des Schamanentums bei den Tungusen.* (An investigation of the bases of shamanism among the Tungus.) *Baessler-Arch.*, 1935, 18, 41-96.—Among the Tungus shamanism is not a religion in the usual sense of the word; it belongs rather with every animistic view of the world. The function of the shaman as a higher order of being is the sanitary and prophylactic regulation of man's psychic sphere, which certainly has great biological significance. Belief in spirits, their relations to man, etc., is only a form in which the psychic and psychopathological phenomena of the people's life appears in the shaman's consciousness.—*P. Krieger* (Leipzig).

5491. *Smith, M. Circulation of national magazines.* *Sch. & Soc.*, 1936, 44, 144-146.—*H. L. Koch* (Chicago).

5492. *Sogemeier, L. Philipp Jacob Spener, eine religionsgeschichtliche Betrachtung.* (Philipp Jacob Spener; a study in religious history.) *Z. ReligPsychol.*, 1935, 8, 151-172.—A biography of Spener, according to C. Bühler's principles. It is based on the theory of two opposite religious types: the centrifugal, characterized by conversion, which drives the individual to maximal activity (Luther, A. H. Francke); and the centripetal, which strives toward

its own ends and recognizes no antagonistic goal, thereby causing tensions (Spener).—*P. Krieger* (Leipzig).

5493. *Stransky, E. Subordination und Autorität.* (Subordination and authority.) *Z. ReligPsychol.*, 1935, 8, 65-78.—The subordination-authority relationship is not necessarily pathological or of sexual origin. It is the foundation of all human association and hence is appropriate to modern man. In religion, those who incline to subordination find their God through nature, while the authoritative find him only by transformation, as a projection and magnification of their own ego.—*P. Krieger* (Leipzig).

5494. *Taylor, J. H. The relationship between finger length, hand width and musical ability.* *J. appl. Psychol.*, 1936, 20, 347-352.—Measurements were obtained on 100 students, including 40 pianists, 30 violinists and 30 non-musicians. The fingers of pianists and violinists "are slightly longer, but the hands are also wider, indicating a general all-over growth rather than a uni-directional development."—*R. S. Schultz* (Psychological Corporation).

5495. *Thomas, W. I. The comparative study of cultures.* *Amer. J. Sociol.*, 1936, 42, 177-185.—The problems of individual and group adjustment are related to a cultural situation and therefore involve studies of cultures, of social organization and education, of the capacity and opportunity of the individual for adjustment, of the failures in adaptation, and of the changes in cultural situations which require continuous readjustment. As the social sciences become concerned with the problems of human behavior especially in its relation with problems of education, contacts of races and nationalities, crime and insanity, there is a renewed interest in the comparative examination of the specific cultural systems of racial and national groups and the behavior of individuals in special cultural situations. In this paper it is assumed (1) that the diversities in behavior are the result of different interpretations of experience rather than different levels in a uniform course of cultural evolution, (2) that the theories of difference in degrees of mental endowment among races and populations have not been sustained, and (3) that emphasis should be placed on the culture area rather than on the natural environment. The reaction of personalities to the cultural situation can best be approached in terms of the definition of the situation. On the social level these definitions are represented by moral and legal codes, political policies, organizations, and institutions. Culture epochs and mass conversions are inaugurated by the propaganda of definitions of the situations.—(Courtesy *Amer. J. Sociol.*)

5496. *Versteeg-Solleveld, C. M. Het wiegeliel.* (The cradle song.) *Mensch en Maatsch.*, 1936, 12, 276-295.—A collection of some 70 cradle songs gathered from literature and folk-lore. Most of them are translated into Dutch. Classification and comments are on the basis of widely derived categories of content. The article is to be continued.—*O. N. de Weerd* (Beloit).

5497. Vialle, L. *Désenchantement. Notes pour la psychologie du combattant.* (Disenchantment. Notes on the psychology of the combatant.) *J. Psychol. norm. path.*, 1936, 33, 285-309.—More than the fear and physical suffering, the feeling of disillusion dominates the author's memories of the war. The beauty, the poetry and grandeur of war exists only in the minds of those who are far away from it.—R. E. Perl (New York City).

5498. Walton, E. P., & Foss, P. E. *Social biology.* Philadelphia: Blakiston, 1936. Pp. 572. \$1.68.—R. R. Willoughby (Brown).

5499. Warner, W. L. *American caste and class.* *Amer. J. Sociol.*, 1936, 42, 234-237.—Caste is distinguished from class by the prohibition of intermarriage and restriction of membership by birth. In the South classes have arisen in each caste (white and negro) which have resulted in an anomalous situation, with unfortunate personality effects, for the upper class of the lower caste.—F. A. Mote, Jr. (Brown).

[See also abstracts 5227, 5245, 5382, 5383, 5394, 5396, 5403, 5417, 5427, 5455, 5557, 5559, 5560, 5563, 5565.]

## INDUSTRIAL AND PERSONNEL PROBLEMS

5500. Barnes, R. M. *Bewegungsstudien im arbeitstechnischen Institut der Universität Iowa, U. S. A.* (Motion studies in the College of Engineering of the University of Iowa.) *Industr. Psychotech.*, 1936, 13, 116-120.—The author, who is director of the College of Engineering of the University of Iowa, describes the significance of time and motion studies and the inclusion of such studies in the curricula of universities and technical high schools.—B. Casper (Tennessee Valley Authority).

5501. Dombrowsky, H. *Eignungsprüfungen und Unfallhäufigkeit.* (Tests of ability and accident frequency.) *Industr. Psychotech.*, 1936, 13, 143-148.—The causes of accident proneness of persons qualified for particular occupations can be determined with reasonable certainty through a carefully undertaken investigation of capacity. Comparative studies among 279 apprentices of an industrial establishment on the one hand, and accident frequency among these youths during a 3-year work period on the other, indicated that agreement was large. Apprentices who did well in the tests of capacity had fewer accidents during this 3-year interval than those who did not do so well.—B. Casper (Tennessee Valley Authority).

5502. Edelmann, E. *Beleuchtung und Leistung.* (Illumination and performance.) *Industr. Psychotech.*, 1936, 13, 148-155.—The reports of the Industrial Health Research Board and the Illumination Research Committee in London frequently concern the influence of strength of illumination upon performance of work. Experiments in the factory as well as in the laboratory are described and conclusions reached regarding the required arrangements of illumination for different types of work. In America

a medical institute has undertaken a study of the relation between age and visual acuity. All these studies are discussed.—B. Casper (Tennessee Valley Authority).

5503. Gaskill, H. V., & Holcomb, R. L. *The effectiveness of appeal in radio advertising; a technique with some typical results.* *J. appl. Psychol.*, 1936, 20, 325-339.—A 50-item test on complete program content of five nationally broadcasted programs was given to a group of 350, including business men, college students, women's clubs and high school students. More program content than advertising content is remembered; "sandwiching in" of advertising announcements throughout the program has good memory value; and men seem to be better informed about programs than women in commodities advertised directly to men or to both sexes.—R. S. Schultz (Psychological Corporation).

5504. Greenshields, B. D. *Reaction time in automobile driving.* *J. appl. Psychol.*, 1936, 20, 353-358.—The brake reaction time of about 1400 people between the ages of 12 and 60 was measured at the Ohio State Fair by means of an apparatus constructed by the Safety Division of the Traffic Bureau of the Ohio State Highway Department. The reaction time, together with information obtained by questionnaire, revealed data concerning the value of such tests for training and safety.—R. S. Schultz (Psychological Corporation).

5505. Pentzlin, K. *Beobachtungen über Zweihandarbeit im Fabrikbetrieb.* (Observations concerning factory work involving two hands.) *Industr. Psychotech.*, 1936, 13, 120-130.—This study is concerned with simultaneous activity of both hands and arms. By means of a factory experiment an attempt is made to answer the question whether the maximum use can be made of the neglected left hand through an analysis of the best method of performing a work operation. In this connection problems concerning the division of attention during simultaneous different movements in factory work are discussed. Finally, the extent to which the arrangement of symmetrical simultaneous acts is limited to certain types of work is indicated. This experiment involved observations of 260 persons in a large factory over a period of 1½ years.—B. Casper (Tennessee Valley Authority).

5506. Ponzo, M. *La prima riunione della Commissione Internazionale Psicotecnica dei Trasporti a Parigi.* (The first international meeting of the Psychotechnical Committee for Transport in Paris.) *Org. sci. Lavoro*, 1935, 10, No. 7.—After a short notice of the meeting which took place in Paris in May 1935, the author considers the problems of traffic from a psychopedagogical point of view; for though all individuals gradually reach an adaptation to the surrounding conditions, Ponzo thinks that this change in mankind is too slow compared with the rapid development of progress; therefore education must help to form the character of individuals so that they may be prepared from their first years for discipline and for behavior which in traffic ought to be the most suitable for the general public.—G. M. Hirsch (Rome).

5507. Roos, M. M. Sampling theory as used in the determination of psychological trends in volume mail. *J. appl. Psychol.*, 1936, 20, 368-391.—This study is based on experience in the Federal government agencies and in analyzing White House mail. Validity, adequacy of sample, and temporariness or permanency of trends are briefly indicated and some of the statistical formulae cited. A mail analysis, as illustrated, covers such items as geographical division, occupation, sex of writer, racial, type of communication, addressee, subject, motivation, etc.—R. S. Schultz (Psychological Corporation).

[See also abstract 5412.]

#### EDUCATIONAL PSYCHOLOGY

5508. Aikens, H. A. College standards and human values. *Ment. Hyg., N. Y.*, 1936, 20, 366-383.—Wm. S. Learned's article in the 1929 report of the Carnegie Foundation for the Advancement of Teaching is critically evaluated. The problem of adapting mass education to the needs of the individual was studied in the report and three ways of achieving this goal were suggested: (1) a system of comprehensive objective tests to supplement or replace the usual course-credit plan of high schools and colleges; (2) the use of cumulative record cards; (3) official student advisors. The writer maintains that official advisors are often inadequately prepared for this duty. Schools must cease striving to turn out standardized products. The individual must be given a chance to "integrate life as he can." This is most difficult when hampered by academic rules. Institutions of today possess positive values, however. Cultural elements uniting education of today with the past make for beauty and dignity in life. Educators must know the fundamentals of human nature and methods of securing inward harmony and sound adjustment habits.—H. S. Clapp (Grasslands Hospital, Valhalla, N. Y.)

5509. Baegge, —. Möglichkeit und Grenzen der Erziehung. (Possibilities and limits of education.) *Kleine Kinder*, 1935, H. 9.—The possibilities of education are limited to a certain degree by the inherited Anlagen of temperament, character, will, and understanding, but the stimulus necessary for the full unfolding of the Anlagen is provided largely by a favorable environment.—E. Eichenkel (Hohenstein-Ernstthal).

5510. Bálint, A. Versagen und Gewähren in der Erziehung. (Restraint and freedom in child training.) *Z. psychoanal. Pädag.*, 1936, 10, 75-83.—With all the progress made in the psychoanalytic study of children, authoritative practical instructions to parents are still uncertain and often contradictory. The same applies to the closely related problems of neuroses. Biological urges (id) should not be arbitrarily curbed or unnecessarily strengthened. Attention should rather be given to the development of self-restraint by teaching the child to anticipate and meet future adult needs and consequences, and hence to curb his own immediate desires (reality principle of Freud). Effective child training involves the

culturally required restraint, reduced to a minimum, of biological and acquired urges and the greatest possible freedom in the intellectual realm.—O. N. de Weerd (Beloit).

5511. Blanchard, P. Reading disabilities in relation to difficulties of personality and emotional development. *Ment. Hyg., N. Y.*, 1936, 20, 384-413.—This study attempts to throw light upon the problems of emotional growth and development in their relation to reading disabilities. It also indicates several ways in which such emotional problems may become associated with reactions to reading and learning to read. Data from psychological examinations, social case work and psychiatric techniques are included. In addition data from remedial teaching and treatment of a psychotherapeutic nature are utilized. Case reports and statistical methods are used in presenting the data.—H. S. Clapp (Grasslands Hospital, Valhalla, N. Y.)

5512. Dexter, E. S. Does mathematics require specialized endowments? *Sch. & Soc.*, 1936, 44, 220-224.—The author presents five lines of evidence in support of the thesis that mathematical ability is not a special ability. (1) She found in college, as well as in elementary- and secondary-school groups, no greater deviation of the grade earned in mathematics from the student's general average than of the grade earned in any other school subject. (2) Students received their highest or lowest grade in mathematics no more frequently than they did in other subjects. (3) The intercorrelations between mathematics grades and grades in other subjects are not out of line with the rest of the intersubject correlations. (4) Family resemblance in mathematical ability, according to several studies, is no greater or less than family resemblance in skill in other disciplines. (5) Students who did not know their grades, when questioned regarding their likes and dislikes and their special abilities and disabilities, did not report otherwise for mathematics than for other activities.—H. L. Koch (Chicago).

5513. Garrison, S. C., & Garrison, K. C. Fundamentals of psychology in secondary education. New York: Prentice-Hall, 1936. Pp. xx + 599. \$2.80.—An application of psychological data and principles to the problems of the secondary school. There are three major divisions. The first is concerned with the growth and the social and mental development of the adolescent's interests in relation to school activities during the secondary school period. The second discusses intensively the applications of psychology to the learning of the secondary school subjects, the interrelationship and the transfer of these materials, and the provisions for individual differences. The third section treats the educational measurements used in secondary education, educational growth, development of attitudes and appreciations during this period, and the guidance and character formation of the adolescent. Thought problems and selected references are included at the end of each chapter, and an index.—P. Brand (Grasslands Hospital).

5514. **Gentzkow, L.** *Schulleistung, Berufswahl und Lebensleistung ehemaliger Gymnasialabiturienten.* (School attainments, choice of profession, and success of public school graduates.) *Z. angew. Psychol.*, 1936, 51, 1-64.—The article is divided into two divisions, (1) the pedagogical-psychological, and (2) the profession-psychological. Part 1 discusses school activities, Part 2 professional success and its relation to school activities. Part 1: 1403 questionnaires, of which 40.8% were answered, were distributed, containing such questions as: (a) Which classes did you enjoy or not enjoy? Why? (b) To what in your school days do you attribute a superiority or inferiority feeling? Results indicate that school success, though dependent upon the student himself, is in a large measure determined by environmental factors, of which the personality of the instructor and his methods of teaching are very important. Other factors are given. Part 2: The same questionnaire also contained such questions as: (a) Did you select your profession? Why? (b) At what age did you make the selection? Results show that definite interests may be present at 17 to 20 years. About 25% were in their professions not by their own choice; 75% were free to follow their interests. Members of the various professions early showed consistent personal interests, indicating the necessity of a flexible pedagogical technique.—*G. F. J. Lehner* (Brown).

5515. **Gerberich, J. R.** *Attitudes of college students toward the use of examinations for determining course marks.* *Sch. & Soc.*, 1936, 44, 284-288.—The report concerns the responses of 219 students pursuing relatively non-technical curricula at the University of Arkansas to a questionnaire regarding examinations. With one insignificant exception the groups tended to favor giving more weight to performance on examinations in arriving at a final assessment of a student's work in a college course than to performance in recitations, term papers, or written assignments. The men were willing to put more emphasis on examinations and less on term papers than were the women. The group tended to the belief that greater weight in the determination of the final grade in a course should be given to examinations in the social sciences and mathematics than in English or the foreign languages. Class recitation was considered especially revealing of a student's ability in the foreign languages. Much difference of opinion was apparent with respect to the optimal frequency of examinations; but 76% of the students favored an examination once a month or more frequently. Preference was about equally divided between a grading system which specifies merely whether the student's work is satisfactory or unsatisfactory and one in which at least a five-point rating of performance is employed.—*H. L. Koch* (Chicago).

5516. **Good, C. V., & Hendrickson, G.** [Eds.] *Abstracts of graduate theses in education, 1931-1936, Vol. II.* Cincinnati: Univ. Cincinnati, 1936. Pp. 249.—This volume lists the thesis titles and authors for the degrees of doctor of philosophy in education,

doctor of education, master of arts in education, and master of education from 1931 through 1936. Thirteen thesis abstracts are published. Those dealing with psychology are: The determination of a course in psychology for the high school, J. A. Broxson; An experimental analysis of the alleged criteria of insight learning, F. D. Brown; Effect of tobacco smoke on the growth and learning behavior of the albino rat and its progeny, W. R. Reynolds; An analysis of the elementary course in statistics with implications for revision and improvement, L. A. Van Dyke; and Configurational and trial and error learning—a comparison, L. M. Wilmoth.—*F. A. Mote, Jr.* (Brown).

5517. **Judd, C. H.** *Education as cultivation of the higher mental processes.* New York: Macmillan, 1936. Pp. 206 + vi. \$2.00.—Methods of learning must be appropriate for the cultivation of the higher mental processes. As experiments with college students have shown, too much emphasis upon the recall of information fails to develop the ability to form inferences from new data. Symbolic thinking is characteristically different from and more economical than perceptual experience; it demands conformity to rules based upon systematic experience and implies an organization of synthetic relationships between concrete details. Surveys of high school texts in the natural sciences show that presentation of material is apparently considered more important than the stimulation of the thinking processes. Thorndike's contributions to educational psychology have minimized the significance of the higher mental processes. Education and certain new-type examinations still suffer from the evil doctrines of atomistic psychology. Systematic thinking requires greater emphasis in the schoolroom. The results of an eight-year experimental study at the University of Buffalo indicate that unless proper methods of thinking are established early in school, permanent improvement in study habits cannot be hopefully anticipated.—*P. S. de Q. Cabot* (Simmons).

5518. **Just, G.** *Scheinbare Fehlerquellen bei statistischen Untersuchungen über Schulauslese und Lebensleistung.* (Apparent sources of error in statistical studies on school selection and success in life.) *Arch. Bevölker. Wiss. Bevölker. Polit.*, 1935, 5, 254-265.—Preliminary mention of a questionnaire sent out by the Institute for Racial Hygiene of Greifswald University. The purpose is to ascertain the relationship between prevocational development and vocational accomplishment; specifically, a comparison between the results when a given school course is completed or left unfinished.—*P. Krieger* (Leipzig).

5519. **Kramm, H.** *Beruf, Schulleistung und Lehrplanwünsche ehemaliger Abiturienten.* (Profession, school success and desired pedagogical changes of recent graduates.) *Z. angew. Psychol.*, 1936, 51, 65-127.—1000 questionnaires were distributed, of which 532 were returned for use in this investigation. The questionnaire is listed. Results show a large degree of correlation between school attainments and later success in the theological and professional academic groups, and lowest correlation for the medical pro-

fession. School subjects desired strengthened are the natural sciences, biology, geography, chemistry, and physics. The largest percentage listed history as a favorite subject, and worthy of increased emphasis. Philological studies were listed after the natural sciences. The personality of the instructor and the extent of personal accomplishments in a particular subject were the most important factors in determining the degree of liking or dislike for that subject.—G. F. J. Lehner (Brown).

5520. Lay, W. A. *Experimental pedagogy*. (Trans. by A. Weil & E. K. Schwartz.) New York: Prentice-Hall, 1936. Pp. x + 371.—The author has attempted to give a comprehensive view of the nature and significance of experimental pedagogy. Modern pedagogy is considered as a science which views the individual and all his human associations as "members of a biocommunity"; this science extends through "value-conforming activity of the spiritual life, interrelating nature and society in order that both may dominate the life of nature." The volume contains an extensive introduction by Paul R. Radosavljevich.—R. W. Russell (Clark).

5521. Meng, H. *Freuds Einfluss auf die Pädagogik und Heilpädagogik*. (Freud's influence on pedagogy and remedial education.) *Z. Kinderpsychiat.*, 1936, 3, 16-23.—A discussion and listing of the ways in which Freud has influenced these two fields.—D. Shakow (Worcester State Hospital).

5522. Myers, A. J. W. Some recent writings on character education. *Relig. Educ.*, 1936, 31, 192-197.—A report based on 19 books published during the last five years, "bearing on the theory of religious or character education." The sections of the report in which excerpts from the individual books are given are: personality and character, which deals primarily with the identification of these factors; the sources of personality, which deals with the neural bases of and environmental factors involved in the personality; the development of personality; the function of religion; and the contribution of religion to personality.—R. Goldman (Worcester State Hospital).

5523. Rosenow, L. *Beziehungen zwischen Schulleistungen und Lebensleistungen*. (Relationship between school attainments and life attainments.) *Z. angew. Psychol.*, 1936, 51, 128-143.—A questionnaire was sent to each of the ten graduating classes of the years 1891-1900, giving a total of 37,242 persons. Replies of 17,934, or 49%, were used for this investigation. Results indicate a correlation coefficient of .20 between school success and later success. No evidence is found for the view that school success is indicative of later failure. Investigation of the results showed that philologists belonged to the upper percentile in their school work, the medical and diplomatic groups to the middle percentile. This supports Just and Lottmann's view that initial interest for school subjects is lacking in the last two groups. The children of academically engaged fathers showed the highest percentage of school success; however, the children of the semi-professional and the laboring

classes showed a high life success.—G. F. J. Lehner (Brown).

5524. Sandon, F. Selection by a nearly perfect examination. *Ann. Eugen., Camb.*, 1936, 7, 65-85.—In the first part of this paper a theoretical table for the correlation between an examination and its criterion ( $r = .95$ ) was used and the effect of selection on the correlation between the variables examined. It is shown that there is considerable overlap in merit of individuals at various successive levels of the examination when a non-perfect test is used. It is concluded that the methods of computing correlations, observing overlap and discovering misfits are all unfair ways of criticizing an examination. Emphasis is placed on the necessity for knowing and considering the population of the examined universe, the number and the scores of successful candidates, and finally the basis of allocation of successful candidates to various schools. In the second part an actual examination is considered and illustrations are drawn from the data to show the effect of selection on the relation of the two subjects by which candidates are jointly selected, together with the effects on observed relationships of other correlated measures. Finally, the author casts doubt on the belief in the development of specific abilities, particularly at the age of adolescence, suggesting that while age is an apparent cause if the truth of the matter were known the values commonly noted would be seen to be a function of selection.—J. W. Dunlap (Fordham).

5525. Schikola, H. *Über Lernstörungen*. (Learning difficulties.) *Z. psychoanal. Pädag.*, 1936, 10, 106-112.—Difficulties in learning specific school subjects are usually bound up with neuroses. They are therefore as a rule complex problems as to cause and treatment. Somewhat detailed reports are given of the analysis and treatment of two cases along typical psychoanalytic lines.—O. N. de Weerd (Beloit).

5526. Skinner, C. E. [Ed.] *Educational psychology*. New York: Prentice-Hall, 1936. Pp. xxvi + 754. \$3.20.—Each of 25 contributors wrote a chapter of this handbook, including an introductory chapter by the editor. These appear under the general headings Growth, Learning, Individual Differences, Adjustment and Guidance, and A Manifold View of Educational Psychology. The last heading covers the final chapter, which correlates the views of learning according to different schools of psychology. While the formal topics and problems are not overlooked, pressing social and cultural considerations are emphasized. The authors are C. E. Skinner, J. D. Lawther, G. W. Hartmann, J. M. Fletcher, F. F. Powers, P. L. Boynton, R. A. Davis, K. C. Garrison, P. A. Witty, W. J. Gifford, R. T. Rock, Jr., M. R. Trabue, T. R. McConnell, J. S. Gray, A. T. Jersild, M. K. Thomson, E. S. Conklin, E. A. Lincoln, L. W. Webb, F. S. Freeman, E. R. Wood, A. W. Aleck, F. A. Moss, J. N. Washburne, and J. E. W. Wallin.—H. D. Spoerl (American International College).

5527. Turner, F. H. Preparation for the position of dean of men. *Sch. & Soc.*, 1936, 44, 254-256.—H. L. Koch (Chicago).

5528. Van Horn, O. Individual satisfaction in adult education. New York: N. Y. Adult Education Council, 1936. Pp. 32. \$0.50.—The article is a brief review of the social significance of adult education. It describes the types of individuals who make use of it, what they are doing, and some of the problems that must be met. The data were collected in New York City.—*J. Brockwell* (Brown).

5529. Williamson, E. G. The role of faculty counseling in scholastic motivation. *J. appl. Psychol.*, 1936, 20, 314-324.—Students advised by a faculty counselor did no better in scholarship than students not advised. It seems evident that study motivation is too technical for faculty counselors and should be dealt with by specialized teachers in a how-to-study course.—*R. S. Schultz* (Psychological Corporation). [See also abstracts 5425, 5473, 5488, 5534, 5535, 5567.]

#### BIOMETRY AND STATISTICS

5530. Eckart, C., & Young, G. The approximation of one matrix by another of lower rank. *Psychometrika*, 1936, 1, 211-218.—The mathematical problem of approximating one matrix by another of lower rank is closely related to the fundamental postulate of factor theory. When formulated as a least-squares problem, the normal equations cannot be immediately written down, since the elements of the approximate matrix are not independent of one another. The solution of the problem is simplified by first expressing the matrices in a canonic form. It is found that the problem always has a solution, which is usually unique. Several conclusions can be drawn from the form of this solution. A hypothetical interpretation of the canonic components of a score matrix is discussed.—(Courtesy *Psychometrika*).

5531. Edgerton, H. A., & Kolbe, L. E. The method of minimum variation for the combination of criteria. *Psychometrika*, 1936, 1, 183-187.—The problem of weighting separate criterion variates is solved by minimizing the differences among the standard scores of the individual upon the various measures. The method is compared with Horst's procedure of maximizing the inter-individual differences. An application is made to personnel data.—(Courtesy *Psychometrika*).

5532. Fertig, J. W. The use of interaction in the removal of correlated variation. *Biom. Bull.*, 1936, 1, 1-14.—A discussion of the concept "interaction," particularly as used in the case of two variables. The term is defined and an example given illustrating the use of interaction in the interpretation of the relationships. Relationships between  $t$ ,  $F$  and the standard error of a difference are pointed out.—*J. W. Dunlap* (Fordham).

5533. Griffin, H. D. A further simplification of the multiple and partial correlation process. *Psychometrika*, 1936, 1, 219-228.—Formulas are derived for simplified computation of partial and multiple correlation coefficients, and generalized to  $n$  variables. Time required for computation is compared with other methods.—(Courtesy *Psychometrika*).

5534. Gulliksen, H. The content reliability of a test. *Psychometrika*, 1936, 1, 189-194.—The content unreliability of an essay test is the error due to the items used or the content of the test. The reader unreliability is due to variation in judgment of the persons who read and score the test. The content reliability of an essay test is accordingly defined as being independent of the reader reliability. Formulae are derived for the reader reliability and for the content reliability. The content reliability is found to be equal to the geometric mean of the test reliabilities computed from the scores assigned by the two readers, divided by the reader reliability.—(Courtesy *Psychometrika*).

5535. Hartkemeier, H. P., & Brown, L. M. Multiple correlation and the multiple factor method. *J. appl. Psychol.*, 1936, 20, 396-415.—The American Council on Education Psychological Examination test scores are compared with scholarship grades and the specific applications of the two statistical methods are evaluated.—*R. S. Schultz* (Psychological Corporation).

5536. Jackson, R. W. B. Tests of statistical hypotheses in the case when the set of alternatives is discontinuous, illustrated on some genetical problems. *Statist. Res. Mem.*, 1936, 1, 138-161.—The theory of testing statistical hypotheses when the set of admissible hypotheses is discontinuous is discussed and a genetical problem used as an example. A test called "the most stringent test" was developed on the consideration of the total probability of errors of any kind involved in testing statistical hypotheses. Tables and diagrams are given to facilitate the use of the most stringent test in practice.—*J. W. Dunlap* (Fordham).

5537. Jellinek, E. M. Measurements of the consistency of fasting oxygen consumption rates in schizophrenic patients and normal controls. *Biom. Bull.*, 1936, 1, 15-43.—The first part of this paper is devoted to the consideration of a measure which will give the most consistent measure of oxygen consumption rates. It is pointed out that the usual self-correlation coefficient gives only a measure of constant relationship between the two variables, but that it is equally important to have some idea of how nearly identical values will be secured on repetition of the measure. It is suggested that if consistency in terms of level maintained is desired in terms of correlation the intra-class correlation coefficient be used. Finally it is suggested that the most straightforward way of expressing consistency of a variable is in terms of the average intra-set variance. In the analysis of variance estimates of the inter-individual and the intra-individual variance are obtained and the ratio of the larger estimate to the smaller estimate (Snedecor's  $F$ ) affords a criterion of the significance of the difference between the two variances. Thus if the intra-individual variance is significantly smaller than the corresponding inter-individual variance it may be said that the individuals tend to be consistent relative to the variable under investigation. If the inter-individual variance is significantly greater than the

intra-individual variance there is evidence that the population under investigation is heterogeneous. The second part of this paper contains a description and an analysis of the data secured from repeated readings on the fasting calorie output of male schizophrenic patients and male normal controls. On the basis of this discussion the conclusion is reached that the consistency of fasting oxygen consumption must be measured in terms of calories per 24 hours. Over long intervals the fluctuation of age, weight, and height interferes with the consistency of the calories per 24 hours. This objection was overcome by a special scheme of the analysis of variance in which the intra-individual variance does not include the variance caused by fluctuations of age, weight, and height of the individual. The intra-individual variance of normal controls over the same time interval is not significantly different from that of the schizophrenic patients. In general, the fasting oxygen consumption does not show a greater consistency on 24-hour repetitions than do other variables such as blood pressure, urinary volume, or erythrocyte count for the same interval.—J. W. Dunlap (Fordham).

5538. Johnson, P. O., & Neyman, J. Tests of certain linear hypotheses and their application to some educational problems. *Statist. Res. Mem.*, 1936, 1, 57-93.—Beginning with the general ideas of testing hypotheses developed by Neyman and Pearson and using certain recent results of S. Kolodziejczyk, the problem of matched groups is discussed and a numerical illustration given. It is shown that the problem of matched groups may be generalized so that both a more detailed analysis of the experimental data and a greater accuracy of results is obtained. In treating this problem the idea of "region of significance" is introduced to educational and psychological investigations. The methods proposed, however, are quite general and not limited to problems in these fields.—J. W. Dunlap (Fordham).

5539. Ledermann, W. Some mathematical remarks concerning boundary conditions in the factorial analysis of ability. *Psychometrika*, 1936, 1, 165-174.—This paper is a mathematical supplement to the accompanying paper by Godfrey H. Thomson. It gives rigorous proofs of theorems enunciated by him and by J. Ridley Thompson, and extends them. Its basic theorem is that if a matrix of correlations is to be factorized without the aid of higher factors than  $s$ -factors (with  $n-s$  zero loadings), then the largest latent root of the matrix must not exceed the sum of the  $s$  largest communalities on the diagonal.—(Courtesy *Psychometrika*).

5540. Nayer, P. P. N. An investigation into the application of Neyman and Pearson's  $L_1$  test, with tables of percentage limits. *Statist. Res. Mem.*, 1936, 1, 38-52.—This paper provides tables of 5% and 1% probability levels for the  $L_1$  criterion when the  $k$  samples contain an equal number of observations. The  $L_1$  criterion is the test that  $k$  independent samples have been drawn from populations having a common standard deviation  $\sigma$ ; it is assumed that the populations are normal.—J. W. Dunlap (Fordham).

5541. Neyman, J., & Pearson, E. S. Contributions to the theory of testing statistical hypotheses. *Statist. Res. Mem.*, 1936, 1, 1-37.—Methods are described which may be followed in choosing a critical region for testing a hypothesis when no uniformly most powerful test exists. The present paper is confined to the case of a simple hypothesis regarding a single unknown parameter, but is of such a nature that it may be extended to a situation where the hypothesis concerns more than one unknown parameter. The practical value of any critical region  $w$  depends on the properties of its power function throughout the range of admissible values of  $\theta$  and alternative regions of the same size may be compared by comparing their power functions. A definition is proposed for an unbiased critical region. It is pointed out that in many problems there are strong intuitive grounds for confining the choice of a critical region to those which are unbiased, in which case it would appear best to choose from among such regions, if it exists, that giving the test which is uniformly more powerful than any other.—J. W. Dunlap (Fordham).

5542. Neyman, J., & Pearson, E. S. Sufficient statistics and uniformly most powerful tests of statistical hypotheses. *Statist. Res. Mem.*, 1936, 1, 113-137.—The problem of testing statistical hypotheses should be treated by starting directly from some comprehensible principle expressed when possible in terms of existing concepts, such as that of probability. A test should be arranged so as to minimize the probability of errors. The errors involved in testing hypotheses are of two kinds. Specification of these lead in one case to the theory of uniformly most powerful tests. In certain problems a solution along these lines is impossible; this has led the writers to the conception of unbiased critical regions. The authors conclude "(a) when a system of uniformly most powerful tests exists and some other additional conditions are satisfied then sufficient statistics either specific or shared must also exist, (b) when a system of uniformly most powerful tests exists there may be no unique sufficient statistic at all, and (c) when a sufficient statistic exists, a system of uniformly most powerful tests may exist or not."—J. W. Dunlap (Fordham).

5543. Stephenson, W. The foundations of psychometry: four factor systems. *Psychometrika*, 1936, 1, 195-209.—Four methods of factorizing the fundamental matrices used in factor analysis are described and illustrated. The first is represented by the techniques already developed. The second is the obverse factor technique. The third and fourth methods are variants of the first and second. The implications of each method for different schools of psychology are pointed out. The methods are complementary, not competitive.—(Courtesy *Psychometrika*).

5544. Sukhatme, P. V. On the analysis of  $k$  samples from exponential populations with especial reference to the problem of random intervals. *Statist. Res. Mem.*, 1936, 1, 94-112.—Tests are developed based on the distribution of intervals between random events. These tests are associated with variations

following the exponential law and are precisely analogous to the tests classed by R. A. Fisher under the heading of analysis of variance in the case of normal law variation. This method is proposed as a complement to the usual count analysis. These methods are illustrated by two sets of data.—J. W. Dunlap (Fordham).

5545. Thomson, G. H. Boundary conditions in the common-factor-space, in the factorial analysis of ability. *Psychometrika*, 1936, 1, 155-163.—The author arrives at a simple rule for ascertaining when a matrix of correlations, with communalities reducing it to minimum rank, cannot be analyzed into factors such that every column of loadings has at least as many zeros as the number of common factors, as required by Thurstone. A more exact but arithmetically tedious rule is also deduced from Ridley Thompson's boundary conditions, and a correction is made to the latter.—(Courtesy *Psychometrika*).

5546. Thurstone, L. L. The factorial isolation of primary abilities. *Psychometrika*, 1936, 1, 175-182.—This is an experimental study of the isolation, by factor methods, of primary abilities from a battery of tests given to 240 students. The range and nature of the 56 tests are briefly described. Tentative interpretations of the twelve orthogonal primary factors are given.—(Courtesy *Psychometrika*).

5547. Welch, B. L. Note on an extension of the  $L_1$  test. *Statist. Res. Mem.*, 1936, 1, 52-56.—This note deals with the extension of the  $L_1$  criterion to problems involving more than one independent variable.—J. W. Dunlap (Fordham).

[See also abstract 5524.]

#### MENTAL TESTS

5548. Brill, M. A comparison of the abbreviated and the complete Stanford Binet scales. *Sch. & Soc.*, 1936, 43, 102-104.—In this study a comparison was made of the complete and abbreviated (starred tests) Binet test ages of mentally deficient boys in a state institution. Two groups of 50 each were tested, their only significant difference being in the degree of social adjustment in the institution. The product-moment coefficients of correlation of the two tests on the adjusted, maladjusted, and both groups were above .93. The author concludes that "the abbreviated-starred-tests Binet age of a mentally deficient boy is a valid measure of his general Binet mental level."—F. A. Mote, Jr. (Brown).

5549. Geller, W. Über Untersuchungen der Nagelfalzkapillaren unter besonderer Berücksichtigung ihrer Beziehungen zur Intelligenz. (Investigations on the nail-fold capillaries, with special reference to their relations to intelligence.) Bonn: Kubens, 1935. Pp. 19.—R. R. Willoughby (Brown).

5550. Grimm, H. Testuntersuchung und Intelligenzschätzung durch den Lehrer. (Test research and estimation of intelligence by the teacher.) *Kwart. psychol.*, 1935, 6.—R. R. Willoughby (Brown).

5551. Gutmann, M. Kleinkindertests. (Tests for small children.) *Arch. ges. Psychol.*, 1936, 96,

24-32.—The author reviews the tests that have been devised for ascertaining the intelligence of children from ages one to six, especially as these are noted in the book on testing children by Bühler and Hetzer. Starting with Binet, he comments on the development of such tests, cites the contributions made by various workers in the field, and compares the results from workers in France, Germany and America. He emphasizes the contribution to the field made by Bühler and Hetzer.—A. B. Herrig (Michigan Central State Teachers College).

5552. Lorge, I. A table of percentile equivalents for eight intelligence tests frequently used with adults. *J. appl. Psychol.*, 1936, 20, 392-395.—This table is based on data from 80 persons ranging from 20 to 70 years.—R. S. Schultz (Psychological Corporation).

5553. Schiff, H. Intelligenz und Lückentest. (Intelligence and the completion test.) *Arch. ges. Psychol.*, 1936, 96, 1-22.—10 persons were subjected to two completion tests, the material in one being concrete, in the other abstract. The method of solving was observed and the testees' subjective observations of method were taken into consideration. A classification of four methods was reached: (1) a verbal word-sense method; (2) a verbal grammatical-sense method; (3) a meaning-sense solution method; (4) a skimming back and forth over the sentence for the solution. The first, second and fourth methods brought better results than did the third. Thus persons of lower ability depending upon word associations achieve better results with completion tests than do those who are conscious of meaning. It may be concluded that the completion test alone is not a safe criterion of intelligence.—A. B. Herrig (Michigan Central State Teachers College).

[See also abstracts 5534, 5535.]

#### CHILDHOOD AND ADOLESCENCE

5554. Anderson, H. H. Motivation of young children: further studies in success and failure, praise and blame. *Child Develpm.*, 1936, 7, 125-143.—This report gives further data on the study of motivation of young children begun by Chase and repeated by Anderson and Smith, using a hand dynamometer as the measure of effort and praise, blame, rewards (gold stars) and punishment (removal of candy buttons from a gingerbread man) as motivating conditions. Irrespective of success or failure, a definite goal with a possibility of knowing one's accomplishment evoked more effort than did an indefinite goal without knowledge of results. Initial efficiency was maintained through a sitting (7 trials) more successfully by success or praise than by either of the failure conditions. This experiment offers no clear-cut evaluation of the relative efficiency of the success and failure conditions as such.—F. D. McTeer (Wayne University).

5555. Asch, H. Modes of thought in high school pupils. *Child Develpm.*, 1936, 7, 121-124.—A report of a study in which three classes (backward class of 1932, regular class of 1936, honor class of 1932) were given a reasoning test and an instruction test of the

author's own devising. The questions asked, criteria for evaluating the answers, and a diagrammatic statement of the results are given. "No conclusion is drawn from these meagre tests." However, the author believes "that the results received warrant further investigation."—*W. McTeer* (Wayne University).

5556. **Bentley, J. E.** *Problem children*. New York: Norton, 1936. Pp. xxiii + 437. \$2.75.—The intention of the author is to outline a clinical approach to education for practical use by teachers and administrators. The assumption is made that many, if not most, of children's mental disabilities are due to physiological defects. Because of lack of training teachers are frequently unable to recognize the causes of either physical or mental aberrations; hence the urgent need of child guidance clinics in even the smallest schools. The largest section of the book is devoted to an analysis of physical disorders (particularly sensory), their detection, treatment and correction. Other subjects are: psychological problems, including learning, perception, attention and emotion as related to problem children; social disabilities; juvenile delinquency; the organization of school clinics; and educational disabilities, typified by an analysis of reading difficulties. In keeping with the aim of practical use, there are, besides copious references, many record blanks, tests, charts and similar diagnostic materials, notably a "psychogram" or inventory prepared for the survey work of a school clinic in the average school. The appendix has a list of voluntary organizations for the study of exceptional children.—*M. P. Montgomery* (Faribault, Minn.).

5557. **Braun, E.** *Eine Kinderfreundschaft*. (A case of friendship between children.) *Z. psychoanal. Pädag.*, 1936, 10, 84-92.—A study of the development of extreme dominance and submission expressed by two little girls in a kindergarten friendship.—*O. N. de Weerd* (Beloit).

5558. **Christoffel, H.** *Psychologie des Kindes das "Caput Nili" der menschlichen Psychologie*. 1896-1936. (Psychology of childhood the source of human psychology. 1896-1936.) *Z. Kinderpsychiat.*, 1936, 3, 9-13.—An historical account of Freud's relations to and influence upon child psychology, written in honor of Freud's 80th birthday.—*D. Shakow* (Worcester State Hospital).

5559. **Datta, A.** *Drawings of children*. *Indian J. Psychol.*, 1935, 10, 179-182.—Drawings of the human figure by 300 Bengali children between 6 and 13 years of age reveal a gradual increase in proficiency with increase in age.—*R. W. Russell* (Clark).

5560. **Dory, A.** *Psychologie und Milieukunde des Schifferkindes*. (Psychology and environment of the boatman's child.) Bonn: Leopold, 1935. Pp. 90.—*R. R. Willoughby* (Brown).

5561. **Foster, J. C., & Anderson, J. E.** *Unpleasant dreams in childhood*. *Child Developm.*, 1936, 7, 77-84.—The data were obtained from 7-day records kept by Minnesota parents on their children under 12 years of age. Records obtained on 519 children were analyzed with regard to age, sex, size of community,

occupation level of parents, number of siblings, sleeping conditions, state of health, subject matter of dreams, and predisposing events from the preceding day's activities. Significant items from the authors' summary are: "(1) No reliable sex differences appear. (2) The number of unpleasant dreams per child and the proportion of children having such dreams decreases with age. (3) The better the general state of the child's health, the less frequent are unpleasant dreams. (4) Children between the ages of one and four have unpleasant dreams about animals, between ages five and nine about strange or bad people and about such impersonal dangers as war, fire, and electricity; between nine and twelve about difficulties surrounding themselves, their friends, and their pets. (5) Children apparently are predisposed to unpleasant dreams by such states as: over-excitement, fatigue, illness, indigestion, fears, worries, anger, and quarreling."—*W. McTeer* (Wayne University).

5562. **Friedmann, A.** *Life-styles observed in a foster home for individual psychological re-education*. *Int. J. indir. Psychol.*, 1936, 2, No. 2, 62-75.—A large proportion of problem children are those who feel unwanted. Even children diagnosed as feeble-minded improve under the encouraging therapeutic methods of individual psychology. Three case histories, including that of one mongoloid, are given.—*M. F. Martin* (West Springfield, Mass.).

5563. **Graewe, H.** *Geschichtlicher Überblick über die Psychologie des kindlichen Zeichnens*. (A historical survey of the psychology of children's drawings.) *Arch. ges. Psychol.*, 1936, 96, 103-220.—The author reviews all the contributions that have been made in the investigation of children's drawings, in periods from 1903 to 1935, and designates their nature in each of ten periods during this time. He criticizes many researches as confined to narrowed age limits, and undertakes studies of his own with children of ages 3 to 20. He has accumulated 6500 drawings for study. These were obtained not in group exercises but individually, so as to make freedom and spontaneity reveal real self-expression. The author comments on the development of drawing ability as maturity progresses, as revealed by his studies. A comprehensive bibliography accompanies the article.—*A. N. Herrig* (Michigan Central State Teachers College).

5564. **Hetzer, H., & Noelle, G.** *Die Funktion verschiedengearteter Kinder in der Kindergarten-gemeinschaft*. (The function of different types of children in the kindergarten community.) *Z. pädag. Psychol.*, 1936, 37, 15-34.—The authors discuss the composition of the kindergarten community as an educational problem; the various types of children found there; the contributions of the different types to the group and their demands on it and on the teacher; and favorable and unfavorable compositions of the group. Kindergarten education of normal children with the physically or mentally abnormal is possible only if constant attention can be given to the equilibrium of the group.—*M. E. Morse* (Baltimore).

5565. **Holzmeister, C.** *Die Weckung des Kunstsinnes in der österreichischen Jugend*. (The awaken-

ing of the artistic sense in Austrian youths.) *Schr. pädag. Inst. der Stadt Wien*, 1935, 5. Pp. 12.—R. R. Willoughby (Brown).

5566. Johnson, B. Variations in emotional responses of children. *Child Develpm.*, 1936, 7, 85-94.—The reactions of each of 18 preschool children are described in each of three situations. Each child was asked to move a stylus through a difficult tracing board in which he received an electric shock and a doorbell rang each time he touched the side. In order to get a toy to play with he had to open a glass-covered box, but the catch to the box was so arranged that it was impossible to do this without causing the bell to ring. He was given two metal balls provided he would push them through a groove in the tracing board; each time he touched the ball to push it he received a shock. The responses of the children in these situations varied from attention to the task with apparent disregard for the noise and shock to marked fear reactions and complete refusal even to remain in the experimental room. "This variability is not directly related to age or sex for this group."—F. D. McTeer (Wayne University).

5567. Key, C. B., White, M. R., Honzik, M. P., Heiney, A. B., & Erwin, D. The process of learning to dress among nursery-school children. *Genet. Psychol. Monogr.*, 1936, 18, 67-163.—The problem was to find the age at which nursery-school children are able to dress themselves, and to evaluate such factors as time, encouragement, interest, intelligence, kind of clothing, and attendance at nursery school. The subjects were 25 boys and 20 girls ranging in age from 19 to 64 months. A scale for measuring the dressing process was constructed which showed a reliability coefficient of  $.90 \pm .02$  (with CA partialled out,  $.78 \pm .04$ ). Results show that chronological age or maturation is of more importance than training. Correlations indicate that the fast dresser is usually the one who is the more efficient and the one receiving fewer verbal aids. The findings as to the effect of the more systematic training to dress oneself in nursery school are not conclusive. Quantitative findings are verified by the children's remarks and teacher's observations of the children's behavior while dressing. The appended bibliography contains 14 citations.—F. M. Teagarden (Pittsburgh).

5568. Krebs, E. Kind und Landschaft. (Children and landscape.) *Z. pädag. Psychol.*, 1936, 37, 108-115.—Children's attitudes toward landscape have scarcely been investigated. Krebs studied from this viewpoint the descriptions of an excursion into the country written by 188 pupils of the eighth grade of the Dresden schools. These reports have special value as showing children's impressions of a landscape seen for the first time. The descriptions of scenery were short and rather conventional; some children (notably the bicycle riders) did not mention it. The trip was, in general, only a means to an end—fun. The boys were more interested in road names and ways of reaching their destination, the girls in the distant view. There appeared to be little appreciation of nature as such; it was evaluated practically, in relation

to their comfort. Only half the pupils (the majority girls) mentioned color, and then only the most striking.—M. E. Morse (Baltimore).

5569. Kroh, O. Die Gesetzmäßigkeit geistiger Entwicklung. (The laws of mental development.) *Z. pädag. Psychol.*, 1936, 37, 1-15; 49-65; 97-108.—A discussion of the steps in the child's mental development; the interweaving at every stage of the subjective mind with the contemporary world-picture; the study of youth as a characteristic and permanent expression of a people's subjective mind, as exemplified by the German youth movement; and the importance of the developmental theory for educational psychology and the totalitarian state. The developmental stages are the expression of a law founded in the subjective mind, which animates and incorporates the objective mind. Kroh stresses the importance of greater attention in education to the prerational stages of mental activity (physiognomy, magic and myth). As these stages determine the life attitude of a considerable part of the people, emphasis on them in the school promotes national unification and abolishes the danger of alienation of "intellectual leaders" from the life and understanding of the real people. It also protects a people from senility, formalism and doctrinairism.—M. E. Morse (Baltimore).

5570. Smith, J. M. The relative brightness values of three hues for newborn infants. *Univ. Ia Stud. Child Welf.*, 1936, 12, No. 1, 91-140.—The relative brightness values for the newborn infant of the hues blue, green and red of the same physical energy were determined. 20 infants seven to nine days of age served as subjects in four experiments each. The subjects were stimulated for five minutes by light of each hue, every light period being preceded by a five-minute dark period. From the percentage of inhibition of activity caused by the colored light, the relative brightness values of the three hues was determined. Activity was greatest in darkness. The percentage of inhibition for blue was 50, for green 30 and for red 23. Activity under red did not differ significantly from activity in darkness. Percentage of time crying was the same in darkness and under red light, less under green light and least under blue light. Sex differences in sensitivity to color were great: the girls were better discriminators of hues. Blue had a decidedly inhibitory effect upon the boys, green a slight effect and red no effect. For the girls all three hues were inhibitory. The values for the boys correspond closely to those for the totally color-blind adults (monochromats), and the values for the girls are similar to those for the protanopic class, the partially color-blind who do not see red.—B. Wellman (Iowa).

5571. Steggerda, M., & Densen, P. Height, weight, and age tables for homogeneous groups—with particular reference to Navaho Indians and Dutch whites. *Child Develpm.*, 1936, 7, 115-120.—"Height and weight tables are presented specific for the Navaho Indians of the southwest and the Dutch whites of Holland, Michigan. Auxiliary tables are

presented showing the average deviation from the weights in the height and weight tables. The weights for specific heights in the tables for Navahos and Dutch white children are generally lower than those in a popular type table based on measurements of American children in general prepared by Mead and Johnson."—*F. D. McTeer* (Wayne University).

5572. Striftou, A., & Gedeon, S. *Jugendkunde und pädagogische Psychologie in Griechenland*. (Science of youth and pedagogical psychology in Greece.) *Z. Jugendk.*, 1935, 5, 126-134.—Striftou outlines the program of research at the laboratory for experimental pedagogy at the University of Athens, which is based on anthropometric studies, and Gedeon describes the experimental school. The classes are limited to 30 and are coeducational. The object is to study educational methods and their relation to personality, experience and performance in children. Group activities, use of free time and of free afternoon work periods, reading habits, and interest in and care of plants in a school garden furnish material for some of the studies made. An individual map is kept of each child, showing for each year a photographic record, body measurements, the child in the opinion of himself, his teacher, and his family, and samples of his work products. 120 such maps have been assembled. Deviations from normal are especially observed and analyzed. Published articles from the institute are listed.—*M. Lee* (Chicago).

5573. Szuman, S. *Die Psychologie des jugendlichen Idealismus*. (The psychology of youthful idealism.) *Z. Jugendk.*, 1935, 5, 158-164.—In youth idealism has three forms, corresponding to three stages in development: anticipatory idealism, built on ignorance and desire for happiness prompted by past painful conflicts with reality; compensatory idealism, the result of disillusionment, *Weltschmerz*, a turning to a better world; and practical idealism, when the youth realizes through experience that unattainable dreams will not satisfy his needs in life. In this last stage he confronts reality in nature, society and himself. The self-ideal changes from a charming dream of what one would like to be to a practical ideal with a goal to work for. Diaries show what tremendous energy a young man will put into the work of self-development. There is consistent progress from 12 to 20 through these stages. Idealizing takes four characteristic forms: idyllic, seeking protection from conflict and disappointment in simple life; romantic, experiencing deep and intense emotions; metaphysical, gaining control over reality by fitting it into a transcendental system; and erotic, experiencing an imagined love in the absence of experience. This anticipatory love has the function of building a high ideal for love on which the actual love experience

can be built. Youthful idealism depends both on outer influences and on inner development, but throughout adolescence it plays an important role in widening vision and keeping the goal high.—*M. Lee* (Chicago).

5574. Vértes, O. J. *Milieu és gyermeki lélek*. (The environment and the soul of the child.) *Mag. psychol. Szle*, 1935, 8, 34-86.—The author discusses the methods and problems associated with different types of environment and their effect on the personality of the child. (Résumé in French.)—*H. J. Wegrocki* (Worcester State Hospital).

5575. Wenger, M. A. *An investigation of conditioned responses in human infants*. *Univ. Ia Stud. Child Welf.*, 1936, 12, No. 1, 7-90.—A series of experiments was undertaken with the purposes of (1) further investigating the conditionability of the neonate and (2) studying the characteristics of conditioned responses in infants. Stimuli were presented by precision instruments and recording was observational and polygraphic or photographic. Attempts were made to condition lid closure to tactual vibration, to condition responses elicited by electro-tactual stimulation, and to condition feeding reactions to auditory stimulations. It was concluded that some forms of conditioning are possible in some newborn infants, but that the responses are unstable and not easily obtained. The data "contribute to the theory that internal inhibition is not a phenomenon of conditioning but an artifact resulting from an experimental environment controlled to the point of monotony."—*B. Wellman* (Iowa).

5576. Wenger, M. A., & Irwin, O. C. *Fluctuations in skin resistance of infants and adults and their relation to muscular processes*. *Univ. Ia Stud. Child Welf.*, 1936, 12, No. 1, 141-179.—Three experiments measured the skin resistance of 15 newborn infants and 6 adults with the purpose of discovering whether a relationship exists between sleep and resistance. It was concluded that neither palmar nor plantar skin resistance can be used as a criterion of sleep. Increases in resistance in both infants and adults were related to muscular relaxation. Decreases were related to phasic and tonic muscular activities. These relationships held throughout the use of several different kinds of electrodes and for both alternating and direct current techniques. Resistance of infants was only slightly higher than for adults. Mean resistance and standard deviation of resistance fluctuation in adults correlated  $.90 \pm .02$ . Therefore data from different resistance levels cannot be directly compared. The use of Z-scores is recommended when comparing serial measurements from different resistance levels.—*B. Wellman* (Iowa).

[See also abstracts 5244, 5319, 5349, 5406, 5422, 5425, 5427, 5436, 5510, 5511.]

